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OUR AUTHORS



Lieutenant Colonel Randall H. Bryant previously wrote for the *MILITARY REVIEW* an article entitled "Educating the Soviet Army Officer," which appeared in the December 1949 issue. He served overseas during World War II for 54 months with the 9th Infantry Division in the Mediterranean and European Theaters. He has been an instructor in the Department of Intelligence, C&GSC, since 1948.

Major John J. Shoemaker served in the Pacific Theater during World War II as a battalion commander and staff officer of an AAA Command. He graduated from the C&GSC in 1949 and has been an instructor in the Department of the Commander and General Staff since that time.

Lieutenant Colonel Charles J. Denholm served with the 1st Infantry Division from July 1938 until August 1943, participating in the African and Sicilian landings and campaigns as a battalion executive and battalion commander. Joining the 36th Infantry Division in Africa, he participated in the invasions of Italy and Southern France. He was with the 36th Division until VE-day as a battalion and regimental commander. Later, he served with Plans Section, AGF, at the Military Academy, and has been assigned to the C&GSC since June 1949.

Mark S. Watson is a member of the *Baltimore Sun* staff, now writing for the Army Historical Division. In 1945, he won the Pulitzer Prize for international correspondence. The first part of his current article appeared in the August issue.

Lieutenant Colonel Daniel Parker, Jr., served at the Artillery School and as S-3 of the 61st Artillery Brigade in the European Theater during World War II. He has been assigned to the C&GSC as an instructor in the Department of the Commander and General Staff since July 1948.

Major James G. Coats has served on the General Staff since graduating from the C&GSC in 1947. He is currently assigned to the Office of the Chief, Supply Division, AC of S, G-4. During World War II, he was Assistant G-4 of the 2d Armored Division and later served as Operations Officer, Medical Field Service School.

Lieutenant Colonel John W. Schroder wrote "Repackaging Requirements Overseas" which appeared in the February 1949 issue of the *MILITARY REVIEW*. He had extensive ordnance service in Australia, New Guinea, and the Philippines in World War II, and has been an instructor, Department of Logistics, C&GSC, since 1947.

Lieutenant Colonel Larry J. O'Neil served with European Theater headquarters and headquarters, Advance Section, ComZ, from 1942 to 1945. From 1945 to 1946, he was with headquarters, Base X, in the Western Pacific. He has been an instructor at the C&GSC since 1948.

Major Ernest E. Steck served in various infantry training installations, including the Infantry School, from 1942 to 1945. He then served with XXIV Corps in Korea from 1945 to 1948. He has been an instructor at the C&GSC since 1949.

The Soviet Economic System

Lieutenant Colonel Randall H. Bryant, *Infantry*
Instructor, Command and General Staff College

THE economic structure of the USSR is that of a highly centralized socialist state, with collective ownership of the means of production and state planning of all economic activity as its salient and distinctive features.

Property in the Soviet Union is owned primarily by the state, to a lesser extent by collective organizations (e.g., collective farms and co-operatives), and to a small extent by private individuals. The land, all forms of natural wealth, and almost all man-made means of production are state property. Private property consists of personal effects, of a few dwellings, the capital of small craftsmen, and of the equipment used by collective farmers in cultivating their individual plots.

Organizationally, the various sectors of the economy fall under the jurisdiction of a number of ministries of the Union government. Progressive subdivisions, functional and regional, lead down to the individual plant, farm, store, or other economic unit. The Union government, through the Council of Ministers (headed by Stalin), exercises effective control over the whole economy.

In contrast to the Soviet system, the productive system of the United States,

except for a very small part, is organized on the basis of private ownership and operation of the factories, machines, and other facilities of production. There is a relatively free market for goods, services, and labor. Prices are determined by the free interchange of willing buyers and sellers. In the United States, the whole economy derives its stimulus from the type, character, and intensity of the wants of the people and their productive power. Business enterprise responds to these wants in its endeavor to produce the goods desired at a profit.

The quest for profits in America results in the growth of competing units of production. Miscalculations of producers regarding the volume of demand are borne as losses. In normal times, these are the guiding principles in the operation of the American economy, although their force and effect are mitigated in certain sections of the economy by the existence of such phenomena as relative monopolies, other efforts to control or maximize profits, so-called administrative prices, and the regulation of business by government. In the latter case, such means as rate regulation, licensing, establishment of parity prices, and interference with abso-

The stated economic objective of the USSR is to increase its military-economic potential until the country considers itself safe against any future contingency. Emphasis continues to be placed on heavy industry

lutely free consumer choices in articles or services believed to be injurious to health or welfare may be found.

The Soviet economy has no such foundation of freedom of consumer's choice, private property, freedom of enterprise, general and pervasive competition, and private profit or loss. Private enterprise is restricted to an enterprise which can be managed by the owner-producer without hired labor. This is a negligible element in the economy of Soviet Russia, since it is restricted practically to handicrafts. In addition, farmers are permitted to cultivate their own very small plots of land on time available to them after they have met the standards of production on collective farms, and to sell this produce on the open market.

With these minor exceptions, in Soviet Russia, all the capital in production, distribution, finance, and so forth, is owned by the state. Agencies of the government plan the economy as a whole, determine the relative urgencies of production, manage its operating units, fix prices, and in all these ways tend to determine consumers' choices. All profit theoretically goes to the state.

Planning system

Since 1921, the *Gosplan* has been the highest planning body of the Soviet system. Although its functions and authority have been changed many times, it still receives its general directives from the Central Committee of the Communist Party and the Party Congresses. On these directives, it bases the well-known Five-Year Plans, Annual Plans, and Quarterly Plans. From these, it draws up plans for the various interrelated sectors of economic life such as, heavy industry, light industry, and transportation. These are further broken down on a geographical basis. *Gosplan* also supervises the fulfillment of all plans on a national, regional, and plant basis. To accomplish

this, the officials must lay out plans for the erection of new plants, determine the requirements for raw materials and manpower, and financial requirements. Representatives of *Gosplan* are located in the various industrial regions or large plants to keep a close check on operations and to make immediate alterations when necessary.

The Five-Year Plan periods commenced in 1928 and lasted until the German invasion of Russia in 1941. During this period, heavy-defense industries were built, some in relatively invulnerable regions remote from the frontiers. The Second Five-Year Plan (1933-1938) saw an almost complete collectivization of agriculture, despite bitter opposition from several agricultural elements. However, production gradually increased and sufficient food was produced to feed the growing city populations. During the Third Five-Year Plan, it was estimated that the industry of the USSR was the third largest in the world. Since World War II, the Soviet government has instituted the Fourth Five-Year Plan, which is due to end this year.

Organization of Soviet Industry

The basic unit of industrial production in the USSR is the single production unit; but the unit is a creature of the state, not of individual initiative. In the case of a very complex industry involving several adjacent factories, this group is known as a combine or *Kombinat*. A combine receives its orders from higher organizations and confines itself to carrying out technical operations. Over the units of the same branch of production are the state trusts, which provide the raw materials, credit, and machinery, and then dispose of the product to other state units, co-operatives, or the public.

The direct supervisor of production in each factory is the manager, appointed by the state, whose chief function is to ac-

comply with the goals set for his factory. Before the goal for a particular factory is finally adopted by the government, the factory manager usually has a chance to state what he thinks his factory can produce.

There has been a steady drift toward treating and rewarding managers after the capitalistic pattern. After establishing the manager's status vis-a-vis the workers, the Party cell, and the trade union, the government began to reward the manager with much higher salaries and bonuses. In addition, generous compensation in kind was made in the form of luxurious apartments, special food rations, and private automobiles.

While there has been some loosening of control from Moscow to intermediate and plant levels, the Soviet industrial operator is subject to the surveillance of both party representatives and the MVD (secret police) in the localities. There is real danger in experimenting because of the close check of the management hierarchy, the party, and the MVD. Lack of success according to plans could be interpreted as sabotage.

In contrast to the Soviet system of industrial management is the American system where the manager may be self-elected, as when his own capital is used, or appointed, as is common in the larger companies where other people's money has been acquired by the sale of stocks and bonds.

Trade Unions

The trade unions of the USSR, when compared with those here in the United States, would be considered as merely administrative units of the government. However, strange as it may seem, the average Soviet worker regards the unions as representing his interests. Every factory has a union committee which represents the workers in conference with the management regarding wage rates

and working conditions. The primary function, however, is to help achieve maximum production and efficiency. Union welfare functions are largely confined to seeking improvements in the living conditions of the workers and to administering social insurance laws. Soviet trade unions are prohibited from calling strikes or engaging in conflicts with the management.

Organization of Agriculture

In 1945, there were almost 6,000,000 farms in the United States, averaging 195 acres in size; more than 60 percent of these farms were operated by full or part owners. In the Soviet Union, on the other hand, 99 percent of all land under cultivation in 1938 consisted of 242,400 collective farms with an average sown area of 1,198 acres, and 3,961 state farms with an average sown area of 6,651 acres.

A collective farm in the Soviet Union, called *Kolkhoz*, is a co-operative association of peasants operating under the national economic plan. Each collective farm is worked by about 75 peasant families. The state farms, called the *Sovkhoz*, are operated by state-appointed managers and use hired labor. There were also a small number of individual peasant holdings in 1938, but they constituted less than 1 percent of the total land under cultivation, and averaged less than two acres per peasant holder in size.

The collective farms are given permanent title-deeds to the land allotted them. The land holdings of the collectives may be increased but not diminished. Each member is allotted a small plot, averaging not more than two acres, for his own use. The member has no title to this small plot, nor may he transfer it. He merely enjoys the use of the plot while a member, and he loses it if he leaves the collective.

This entire system, of course, is in sharp contrast to the American system of private ownership with its right of trans-

fer and inheritance. On the other hand, the collective member may own a dwelling house, but not the land upon which it is built; a limited amount of livestock; and some small tools.

With some exceptions, even the collectives have to borrow the needed farm machinery, such as tractors and combines. These are rented from the local machine and tractor stations, the MTS, which are state-owned. These stations, numbering over 6,000, furnish and service farm machinery for the collectives, the latter supplying the operators. In payment, the stations receive a portion of the collective's harvest as rent for their machines. The stations also provide a convenient mechanism for assuring government control over farm operations, since their equipment is relied upon by the collective farms to do much of the work. In addition, since the machines they own harvest the crops, the stations help assure government receipt of a very large portion of the crops which it requires to be delivered to it at low fixed prices.

Each able-bodied member of a collective is required to perform a specified amount of work for the collective. The governing body of the collective determines the amount each year, and this amount is expressed as so many work-days per member. This work-day is measured not in so many hours of work but in terms of the type of work performed and the quality of the performance. Each member, after first fulfilling his work quota of so many work-days is free to spend all additional time on his personal plot. The income of the individual member is derived partly from the sale of the produce raised on his own plot of ground and partly from dividends received from the collective in case the quota is surpassed.

The state farms, which are much larger than the collectives, serve as centers of agricultural research and improvement. However, they only account for a very

small fraction of the total farm production in the USSR.

There are three general methods of marketing the produce raised on the collectives. First, a stated quantity per acre must be sold to the state at a fixed price; second, sale to the state industrial units and the co-operatives, with which the collectives make contracts at prices considerably higher than in the case of the first method; and third, sale on the open market of all produce not disposed of in the first two methods. Individual members of the collective may sell the product raised on their own plot, as well as their share of the collective surplus, if any, on the open market.

Transportation System

Unlike the United States, which has the largest system of rail and motor roads in the world, the USSR still offers great prospects for expansion of internal railways and motor highways. Since the Soviet Union is mostly situated north of the 40th parallel, climate limits inland waterway transport to the warm season. Highway transport has been limited both by the shortage of motor trucks and the scarcity of gravel suitable for road building.

The enormous size of the Soviet Union also impresses one with its need for transportation. It takes 9 to 10 days over the Trans-Siberian Railway to travel the approximately 6,000 miles from Leningrad to Vladivostok. There are no railroads from the southern boundaries northward at the widest point to the Arctic Ocean. There are approximately 66,000 miles of track in the Soviet Union, only one-third of which is double-tracked. This should be compared with the more than 228,000 miles of track in the United States, of which 36,000 miles are double-tracked and 2,800 miles are electrified.

The Soviet Union has the longest coastline of any country in the world, but most

of it is useless. The Arctic ports, with the possible exception of Murmansk, are open only 2 or 3 months out of the year. From the Black Sea ports, ships must pass through the Straits of Bosphorus and the Dardanelles to reach the Mediterranean, and through Gibraltar or Suez to reach an ocean. In the northwest, Soviet ships must pass through the landlocked Baltic.

Inland waterways of the Soviet Union include many thousands of rivers, canals, and several seas, which before World War II carried an estimated 70 billion ton-miles of cargo. Under the present Fourth Five-Year Plan, the Soviets plan a 38 percent increase. The Volga River system alone carries about half of the total river freight. Although affected by the climate during a portion of the year in the north, rivers rank second to railroads in the movement of freight in the USSR.

The road net is very poorly developed and poorly maintained and has never played as important a role in the economic life of the Soviet Union as it has in the United States. There are exceptions, of course, but few roads are capable of carrying really heavy motor traffic. The largest towns, especially in Asiatic USSR, are connected only by dirt track or corduroy road. Roads are mainly significant in central Asian and Siberian regions not reached by railroads. There are more than 835,000 miles of roads in the Soviet Union, of which only 29,500 miles are paved and less than 25,000 miles are improved with gravel. This may be compared with more than 3,000,000 miles of rural roads in the United States, of which more than 187,000 miles are paved and 1,200,000 miles are improved.

Motor vehicles in the Soviet Union numbered 1,060,000 in 1941, of which the great majority were trucks, compared with a figure of more than 30,000,000 vehicles in

the United States. The Soviet government has made plans to step up the production of motor vehicles to 500,000 a year by the end of 1950. Motor transport is engaged mainly in delivery of goods to railway stations and river ports, and in conveying the goods from stations and ports to small towns and villages.

The Individual in Soviet Economy

General statements concerning the living standards of the ordinary Soviet citizen are extremely difficult to make because of the wide variety of peoples and cultures included. Living conditions vary from the nomadic life in a tent of the Kazakh through the life in a thatched-roofed mud hut of the Ukrainian, to the life of the city dweller in Moscow. Even within each group, there are wide differences in living standards; thus, a peasant may belong to either a prosperous or a poor collective farm. Published wage rates really give us very little information, not taking into account the fluctuations in purchasing power of the ruble.

A consideration of living standards, therefore, should take into account factors that cannot be measured in physical terms. Among these might be mentioned increasing security due to the absence of unemployment, and psychological satisfactions due to cultural advances. Historically, Soviet consumption has been of goods of less variety and poorer quality than those consumed in most of Western Europe and the United States. Production of shoes, clothing, radios, and other consumer's goods received much less emphasis under the Five-Year Plans than the output of basic industries, so such items have remained scarce. Living standards of the peasants may possibly be compared to those of the most underprivileged section of agricultural labor in the United States, such as the share-croppers and the migrant workers.

The Soviet Army comprises one of the

most privileged groups in the USSR. Some of the other privileged groups are party officials, intellectuals, plant managers, and the highest ranking workers. The privileges, in addition to much higher pay, are such things as higher food rations, discounts at restaurants and night clubs, automobiles for personal use, and trade at special stores where a wider variety of food and clothing are sold.

Even as late as 1940, very few Soviet citizens owned such everyday articles as refrigerators, automobiles, radios, or vacuum cleaners. The effect of the German invasion was to depress still further the already low standard of Russian living. Whole areas have suffered almost complete destruction. Schools, hospitals, and factories have been destroyed in large numbers. Food has been and still is extremely scarce in many areas. There is a great scarcity of most consumer items. For some time to come, the prospect of a continuing dearth of consumer goods will exist.

Postwar Trend

The government of the Soviet Union quite plainly states that the economic objective of the USSR is to increase her military-economic potential until the country will be safe in the future against any contingency. The USSR is now in the last year of the Fourth Five-Year Plan and has gone far in recovering economically from the effects of the last War. Heavy industry still receives the major part of Soviet effort.

Leaders still speak of improving the lot of workers and peasants, but the immediate future holds little prospect of restoring depleted inventories of consumer goods, or of providing additional housing. The immediate objective of the Soviet Union appears to be reaching the aggregate heavy industry output of the United States in 1939 in as short a time as possible. Over a long period of time, further industrialization may provide living standards that will approach favorably those in the United States.

The concept of war potentiality appears today as one of the principal elements of military capacity, in the narrow sense of the word, and of war capacity in a broader sense. Economic capacity is of great importance. Experience showed that war potentiality possesses another aspect that was previously unsuspected. Continuous production—production which is continually stepped up in time of war—appears today to be a condition of defense.

French Minister of National Defense M. Ramadier

If there is anything today that would give pause to a potential enemy who might be considering world domination, it would be less the growing strength of our armed forces than it would the great industrial potential of this country. Our ultimate reserve is our great industrial potential.

General J. Lawton Collins

Break-through of the Gothic Line

Major John J. Shoemaker, *Coast Artillery Corps*
Instructor, Command and General Staff College

THE Gothic Line was one of a series of defensive positions established by the Germans during the Italian campaign. This defense line, erected along the North Apennines, stretched from the Ligurian Coast to the Adriatic Sea. The campaign which breached these defenses is replete with lessons to be learned about mountain operations.

Prior to the attack on the Gothic Line, the Allied forces, composed of the Fifth and Eighth Armies, were opposed by the German Tenth and Fourteenth Armies. The Germans, while outnumbered, were on exceptionally good defensive terrain. On either side of the formidable barrier of the Gothic Line, these two forces prepared for an all-out struggle. To understand the disposition of forces and the plans which breached the Gothic Line, a brief review of the Italian campaign which led up to the attack on this Line is necessary.

The broad strategic aim of the Allied campaign in Italy was to contain the maximum number of German troops in Italy, to capture airfields from which to bomb targets in German occupied Europe, and to obtain ports for further land operations against the Continent of Europe.

In its initial stages, the execution of

the Allied mission in Italy had been largely the story of hard fighting over mountain terrain in miserable weather; of slow advances followed by periods of resting and regrouping for the next push. Ernie Pyle, in an article on the Italian campaign, wrote: "The war in Italy is tough. The land and the weather are both against us. It is the weather and the terrain and the weather."

From 3 September 1943, when the British Eighth Army crossed the straits from Sicily, the advance up the Italian boot was difficult and slow. Six days after the Eighth Army invasion began, the Fifth Army, which included both British and American troops, landed at Salerno.

The Germans prepared two strong defensive lines across Italy south of Rome, the Winter Line and the Gustav Line. In breaching these defenses, the Allied armies gained much experience in mountain fighting. Rome fell on 4 June 1944. Two days after Rome fell, Allied forces landed in Normandy to open the long awaited second front. Two months later, Seventh Army, composed largely of former Fifth Army units, invaded Southern France.

The capture of Rome initiated a pursuit of the German forces which continued to

After the fall of Rome, the Germans fell back to the Gothic Line in the North Apennines of Italy. The Allied attack on this Line shows how success in mountain operations depends on small unit actions

the Arno River. Although the pursuit was rapid at first, extended supply lines, demolitions, and heavier German resistance gradually slowed the advance of the Allied forces. During this action, nine full infantry divisions, and the equivalent of a tenth division, departed for France.

In spite of the loss of these troops and the priority given to the campaign in France, Fifth Army pressed hard on the retreating Germans and drove them to the Arno River, nearly 150 miles north of Rome. As the Allied forces approached the Arno, the enemy resistance stiffened and the last 20 miles of Fifth Army's advance saw a number of hard-fought battles. The enemy was trying to gain time to finish the Gothic Line in the North Apennines. The stiffening enemy resistance came at a time when the Allied forces were exhausted from the extended pursuit. The lengthening supply lines were incapable of supporting a co-ordinated attack on the Gothic Line. From the last week in July until the end of August, the Allied forces were drawn up on the south bank of the Arno River, preparing to cross it and assault the Gothic Line.

Terrain of the North Apennines

The route of the Fifth Army, in September, lay between the Arno and Po River Valleys. In this area, the mountain range of the North Apennines stretches southeast across Italy from the Ligurian Coast below Genoa to the Adriatic Sea south of Rimini. Fifty miles across at the narrowest point, between Florence and Bologna, the mountains rise to peaks which, in some cases, are over 7,000 feet high. Though the North Apennines extend generally northwest-southeast, the erosion of streams, in addition to the irregular geological formation of the mountains, has compartmented the terrain by cutting it into northeast-southwest spurs, discontinuous ridges, and valleys. The compartments vary in size and are separated

by steep slopes and commanding heights. Like the spurs, most of the streams and roads run northeast-southwest. Exceptions are the Florence-Bologna road, Highway 65, which runs north-south; and the Sieve River, which flows east.

Owing to the problems of supply and movement over the mountainous terrain, the Fifth Army attack had to follow the main roads which crossed the watersheds of the mountains through low passes. So rugged was the terrain that vehicular movement off the main roads was severely limited. The most direct route from the Arno to the Po Valley runs from Florence up Highway 65 over Futa Pass to Bologna.

Defenses of the Gothic Line

During the winter of 1943, while the Allied forces were still 100 miles south of Rome, the Germans began to build the defenses of the Gothic Line. Using about 15,000 Italian farmers and laborers, the *Todt Organization*, which had built Germany's Siegfried Line and other defenses, planned and constructed the defense across the North Apennine Mountains. After the break-through on the Gustav Line, the Germans speeded up the work on the Apennine defenses.

The German main line of defense was built to take the fullest advantage of the high, steep mountains and the small number of roads which crossed them. In general, the Gothic Line ran along the south side of the water divide of the North Apennines. Stretching 170 miles, the Line was too long to permit a continuous defense in the time and with the resources available to the Germans. The rugged terrain and the limited road net enabled them to concentrate their defenses at a few important places.

From the standpoint of terrain, the weakest point in the Gothic Line was along the north-south Highway 65. Here, Futa Pass is relatively low, the mountains are less steep than in other areas,

and Highway 65, between Florence and Bologna, is the best route through the mountain range. Aware of its topographical weakness and its military advantages to the Allied side, the Germans made Futa Pass a strongpoint in the Gothic Line defenses. The defenses of Futa Pass extended 7 miles on either side of Highway 65. Elsewhere along the Gothic Line, the enemy exploited the natural defenses of the mountains, supplementing them with prepared defenses to protect the other passes.

Plans for Attack

As the Fifth and Eighth Armies drew up to the Arno River, General Sir Harold R. L. G. Alexander, commander of the Allied Armies in Italy, made plans to continue the offensive. The original plan called for the Eighth Army to take Florence and clear the area north of the Arno River and immediately west of the city. This was to be followed by a coordinated attack by both Armies against the Gothic Line north of Florence, with the aim of breaching the enemy defenses along Highway 65 in the central zone. D-day was set for 10 August.

After these plans were made, later intelligence emphasized the strength of the enemy defenses around Futa Pass and the troop concentrations in the central part of the Line north of Florence. The enemy strength in this sector threatened the success of a frontal thrust from Florence, and as a result, new plans were made.

In the new plan, General Alexander shifted the axis of attack to the Adriatic Coast, hoping thereby to throw the enemy off balance and obtain surprise. An Eighth Army thrust on the east would threaten the enemy's left flank. The plan envisaged an enemy reinforcement of this flank with his reserves and possibly some troops from the mountains on the central front. The plan then provided for a Fifth Army

attack north along the Florence-Bologna axis at a time to be fixed by General Alexander in consultation with General Mark Clark, commanding the Fifth Army. The maneuver sought to trap the German *Tenth Army* between the two Allied Armies. If the plan worked out, the Allied forces would not only break through the Gothic Line and reach the lower Po, but they would destroy a large part of the German forces in Italy.

In the Fifth Army zone of attack, the American II Corps and the British XIII



Corps abreast would seize the four 3,000-foot mountains, 6-8 miles north of Florence, which formed the next natural defense line. Once these features were secured, Fifth Army would advance across the Sieve River Valley and breach the Gothic Line. The plan provided for II Corps to attack up Highway 65 against the powerful Futa Pass defenses. At the same time, XIII Corps would assist by attacking on II Corps' right flank up the San Pietro-Firenzuola-Imola road which branched off Highway 65, 13 miles north of Florence.

Eighth Army Attack

On the Adriatic Coast, the Eighth Army jumped off on 18 August and in less than 3 weeks pushed nearly 30 miles up the coast. The attack breached the Gothic Line defenses in its zone and the plan was working out as General Alexander had anticipated. To meet the threat posed by Eighth Army on the Adriatic Coast, the enemy shifted three good divisions from the central and western fronts and committed most of his reserves.

As a result of this diversion of troops, the German forces in front of Fifth Army were so thinned out that those who were left did not attempt a defense of the first natural defense line in the mountains 6 to 8 miles north of Florence, but withdrew to the Gothic Line. The principle of maneuver had been successfully applied to attain surprise and to set the stage for the Fifth Army attack.

Outflanking Futa Pass

On 4 September, Fifth Army issued a new operations instruction which changed the axis of its attack. Instead of a frontal assault against the strong Futa Pass defenses on Highway 65, the new plan called for II Corps to outflank these defenses by breaking through the Gothic Line at the Giogo Pass, 7 miles to the southeast on the San Pietro-Firenzuola road, Highway 6524, and then drive on to Firenzuola. After the break-through of the heavily prepared line, by II Corps, the aim was to push quickly through the mountains into the Po Valley to accomplish the destruction of the German forces by encircling them south of the Po River.

For the attack, II Corps planned to use three divisions. The 85th Infantry Division would make the main effort on a narrow front in the vicinity of Il Giogo Pass to seize Mount Altuzzo, the dominant height on the east side of the Pass, and then push on north to capture the mountains east and north of Firenzuola.

On the 85th Division's right flank, XIII Corps would assist the main attack. On the left flank of the 85th Division, the 91st Infantry Division would assist the main attack.

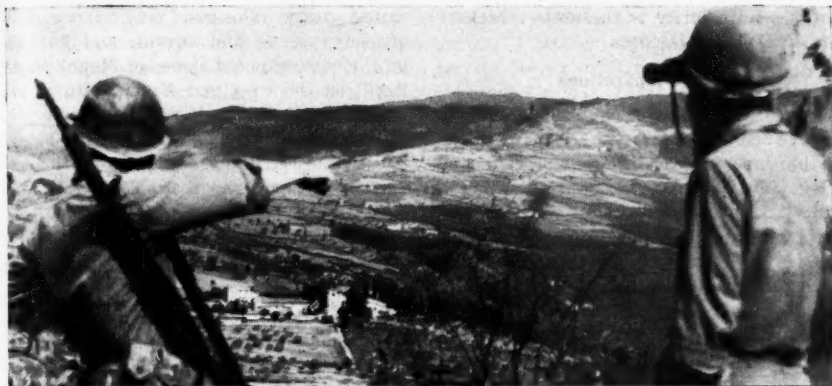
In the zone of the 91st Infantry Division to the west of the San Pietro-Firenzuola road which wound north through the Pass, Mount Monticelli dominated the approaches to the Pass. The mission of the 91st Infantry Division was to capture Mount Monticelli and, in addition, to contain the enemy on a broad front to the west to Highway 65.

The 34th Infantry Division would carry out the same mission against the Gothic Line positions to the west of Highway 65.

The main purpose of the attacks east and west of Futa Pass was to contain troops which the enemy might otherwise shift to meet the principal thrust against Mount Altuzzo and Giogo Pass. A secondary purpose of these attacks on each side of the crucial zone was to prepare the way for rapid exploitation once the break-through of the Il Giogo defenses was effected. The 88th Infantry Division would be held in reserve to exploit a break-through or an enemy withdrawal.

The success of the Fifth Army plan hinged on the capture of the Giogo Pass, which would outflank the heavy defenses on Highway 65 at Futa Pass. When these defenses fell, or were abandoned as the flanking threat became more dangerous, the best road between Florence and Bologna, Highway 65, would be open to our forces. The entire effort was to be directed at gaining control of the terrain which dominated the roads and passes through the mountains. Once a break-through was made, a general enemy withdrawal could be exploited along any of the main highways.

Corps artillery was to give maximum support to the units striking against the enemy defenses in the Giogo Pass area,



These pictures show some of the areas and operations in the North Apennines in Italy where II Corps made a break-through of the Gothic Line in September 1944. Above, a view of Futa Pass, which was strongly defended by the Germans and eventually out-flanked by an attack through the Giogo Pass to the east. Right, US troops carrying rations in the rugged terrain north of Futa Pass, a few days after the break-through. Below, a pack train used in supplying forward troops during the Gothic Line operation. The importance of small unit actions in mountain operations was demonstrated; a key point was taken by a single battalion.—US Army photos.



and second priority to the units attacking the Futa Pass defenses.

Air Preparations

Prior to the attack, medium- and fighter-bombers were to strike at the Gothic Line defenses in front of Futa and Giogo Passes, as well as gun areas 3 miles northwest and 5 miles west of Futa Pass and at Firenzuola, and other areas outside the range of the corps artillery.

During the attack, fighter-bombers were to attack the Gothic Line positions and gun areas at Firenzuola and north of Futa Pass. They were to give continuous support in front of the troops which were making the main effort against the Giogo Pass, and to provide armed reconnaissance of the main roads in front of the forward ground troops.

The Giogo Pass Area

In the area of the Giogo Pass, where the principal Fifth Army effort against the Gothic Line was to be made, the enemy made excellent use of the terrain for defense. He based the defense of the Pass on a group of 3,000-foot peaks which flank both sides of the Pass. Water erosion of the slopes had divided the terrain into compartments and pockets which provided ideal locations for defense. Except for heavy stands of pine trees on the northwest slopes of Mount Altuzzo and the area west of the Giogo Pass, and of oak trees on the lower slopes of Mount Verucca, the ridges had only a covering of rocky soil, low bush or grass, sparsely interspersed with trees. What little concealment there was came from the unevenness of the slopes. The high peaks gave the enemy dominant observation for miles to the south, so that he could see every forward daylight movement of attacking troops.

The slopes on either side of the Pass were too steep for tanks. Highway 6524 was the only possible route for an ar-

mored attack. This road was narrow, full of sharp turns and curves, and flanked by the bare, exposed slopes of Mount Monticelli on the west and Mount Altuzzo on the east. Enemy self-propelled guns or other antitank weapons could easily bring effective fire on the road and stop armored movement along the road.

Aware of the limitations on the use of armor in the area, the enemy engineers devoted most of their efforts to developing strong infantry positions. They were so successful in fitting the defensive installations to the terrain that many terrain features were defended by more troops than could be deployed on the narrow ridges which were the only avenues of approach. Maximum utilization of the terrain was achieved by the defender.

Mount Monticelli, which towers above the highway on the west, is a long, high, steep, backbone ridge with a concave slope which faces south and runs to the northwest. There is very little concealment or cover on the lower slopes, and none at all on the higher slopes. On these higher slopes, the ground is subject to crossfires from the western ridge of Mount Altuzzo.

East of the road stands the other bastion of the Pass, Mount Altuzzo, a high cone-like peak which towers 2,778 feet high, 165 feet above Mount Monticelli. From the highest peak, the main ridge runs south 2,500 yards and a western ridge extends 500 yards forward of the highway. The two ridges form a natural bowl, allowing a classical U-shaped defense. The Germans had pushed their defenses well forward along the ridges covering all natural avenues of approach.

Enemy Dispositions

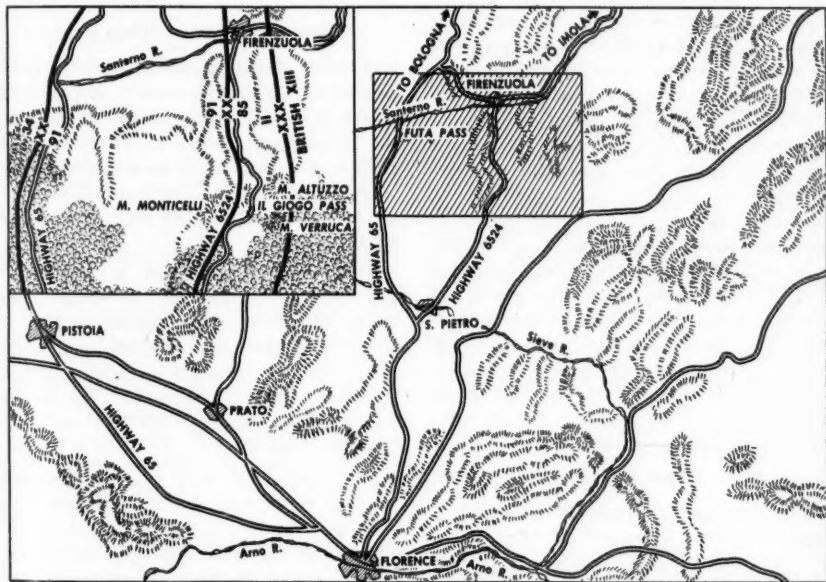
Facing the Fifth Army was the German *Fourteenth Army*, which had suffered heavy casualties during the pursuit to the Arno River. Although the halt of the Allied offensive at the end of July gave the

enemy time to regroup and refit his battered forces, the strength of the German *Fourteenth Army* was still well below that of the Allied *Fifth Army*. Opposite the six and a half divisions of *Fifth Army*, the German *Fourteenth Army* had the *XIV Panzer Corps* on the west and the *I Parachute Corps* on the east, a total of six divisions and one independent brigade. The combat strength of the German divisions was probably not over one-third

offensive against the Gothic Line, the German *Fourteenth Army* faced the prospect of losing even more troops to reinforce the German *Tenth Army's* sector to the east. The plan was working out well.

The Gigo Pass sector was held by the 4th Parachute Division. The reserves of this division were green troops who had never been in action.

Despite the shortage of front-line troops and reinforcements, the enemy's intention



that of the American divisions. In the 3 weeks following the British Eighth Army's attack, four divisions had been shifted from the German *Fourteenth Army* to the German *Tenth Army* on the east. As a result of these withdrawals, the reserves in the *Fourteenth Army* were reduced to two battalions. At no more than half strength, each division left in the German *Fourteenth Army* held a wide front averaging 10 miles. At the start of *Fifth Army's*

to hold the Gothic Line as long as his limited resources permitted was indicated on 8 September when each German soldier in the 12th Regiment of the 4th Parachute Division was issued an order to "—hold to the last man and the last bullet, even if the enemy breaks through on all sides, as well as against strongest artillery or mortar fire. Only on authority of the Company Commander may the position be abandoned."

Fifth Army's Advance

On 9 September, General Mark Clark, Fifth Army Commander, ordered II and XIII Corps to jump off the next day toward the Gothic Line. II Corps advanced with the 91st Infantry Division on the right and the 34th Infantry Division on the left. The 85th Infantry Division, which was to make the main effort, was held out until the other divisions should encounter heavy resistance. By the end of 11 September, the 91st Infantry Division was within 2½ miles of the Giogo Pass. At this time, the 91st Division was on a very wide front with the one regiment astride Highway 65 and a second regiment astride Highway 6524 along which axis the main effort was to be made. During the night, plans were made for the 91st Division to continue the attack on 12 September to seize the dominant features on either side of Giogo Pass, Mount Monticelli, and Mount Altuzzo. Commitment of the 85th Division, originally slated to capture Mount Altuzzo, was delayed pending stiffer resistance requiring additional troops. During the night 11-12 September, the 85th Division moved forward to an assembly area near Vaglia, some 10 miles south of the 91st Division front lines.

First Attack on Giogo Pass

The 91st Division reached the southern slopes of Mount Monticelli on 12 September but were unable to advance beyond the lower slopes.

During the day, Major General Geoffrey Keyes, II Corps commander, gave the order to commit the 85th Division the next morning, the 13th. The mission assigned to the 85th Division was the capture of Mount Altuzzo.

During the night, the 91st Division made an attack against both Mount Monticelli and Mount Altuzzo. This attack failed and greatly complicated the task of the 85th Division the next day. The action of the 91st during the night of the

12th-13th was beset by all the difficulties of mountain terrain; communication failures, lack of control, loss of direction, and inability of the subordinate units to fix their locations. It was an unco-ordinated action by units of company size on each of the peaks.

When the 85th Division was ready to jump off on the morning of the 13th, they were faced with the problem of passing through a company of the 91st Division whose location was unknown.

Second Attack on Giogo Pass

When II Corps committed the 85th Division, the plan provided for a co-ordinated attack by the three divisions—the 34th on the left, the 91st in the center, and the 85th in a narrow zone on the right. The boundary between the 85th and 91st Divisions ran slightly to the left of Highway 6524.

The Corps attack order assumed that the main objectives in the Giogo area might still be in enemy hands at H-hour on 13 September. The 91st Division would assist the main effort by capturing Mount Monticelli. At this time, all indications were that the enemy expected the main effort at Futa Pass.

The plan of the 85th Division provided for two regiments abreast, the 338th attacking Mount Altuzzo, and the 339th, Mount Verruca, the next hill mass to the east. These units were to jump off from the forward positions of the 91st Division at 0600 on the 13th. On Mount Altuzzo, the terrain was such that not more than one company could be deployed in the initial attack, and during the entire battle not more than two companies could be employed simultaneously on the approaches to the peak.

At 0600 on the 13th, the second attack on the Giogo Pass jumped off. What was supposed to be a co-ordinated corps attack in this area turned out to be a series

of unco-ordinated attacks by elements of the 91st Division and the 85th Division. Elements of the 91st Division were still attacking up Mount Altuzzo even as the 338th Infantry, ignorant of the location of the unit it was to pass through, jumped off in the same zone of advance.

All during the day of the 13th, confusion existed as to the location of the elements of the 91st Division on the slopes of Mount Altuzzo.

The second attack on Mount Altuzzo ended with elements of the 85th Division on the lower slopes. On the right, the enemy still held Mount Verruca. On the left, he was still in possession of Mount Monticelli. On Highway 6524, some gains were made, but it was apparent that further success along this axis would depend on the action against the peaks guarding the Pass.

The Third Attack

On 14 September, II Corps attacked all along the front of the Giogo Pass area. The 91st Division hammered unsuccessfully all day at the Mount Monticelli defenses. On Highway 6524 and on Mount Altuzzo, the 85th Division made appreciable advances by hard fighting, but the enemy positions along the upper reaches of Mount Altuzzo were too strong and all elements of the division were forced back to the previous day's position by dark. On Mount Verruca, the attack likewise failed to take its objectives. During the night preceding the attack, the enemy had reinforced the positions on Mount Altuzzo to a strength of 250-300 men. Because of the terrain and the other circumstances of our attack, this was a larger force than we threw against the defenses of Mount Altuzzo at any one time during the 5-day battle.

By the end of the 14th, the German *Fourteenth Army* was well aware that II Corps was making the attempt to pene-

trate the Gothic Line but had not yet divined our intention to make the breakthrough in the Giogo Pass area.

The Fourth Attack

On 15 September, the defenses of Giogo Pass held firm: The attack on Mount Verruca failed. That on Mount Altuzzo reached within 250 yards of the crest, but this short distance was no measure of success, since the top-most ring of defenses between the two ridges was not reached. There was no advance on Highway 6524. On Mount Monticelli, ground had been gained, but the crest remained in enemy hands.

The enemy situation at the end of 15 September had deteriorated sharply. The artillery support given our attacking units had taken great toll. Some of these casualties had been caused while the enemy was moving reinforcements into the area. The enemy had committed the reserves available and was moving units from the sector to the west, in front of the US IV Corps. During 15 September, one battalion arrived at *I Parachute Corps*. A second battalion was enroute to join. By morning of the 16th, this small group of reinforcements was on the way to the assistance of the units on Mount Altuzzo, Mount Monticelli, and Mount Verruca.

The Fifth Attack

About 0800 on the 16th, the II Corps Commander stated that he wanted the 85th and 91st Divisions to launch a co-ordinated attack on Mount Altuzzo and Mount Monticelli at once. The 91st Division was not ready, but the 85th planned to continue the attack during the day. Accordingly, the attack was resumed along the Highway at 1200 and up the Altuzzo ridges at 1630. During the remaining hours of daylight, the attack was slow; but during the night the peak was reached. By-passed pockets of the enemy held out during the morning of the 17th. Three unsuccessful counter-

attacks were launched by the enemy during the 17th in an attempt to recapture the peak. Mount Verruca and Mount Monticelli fell during the day. By the success at Giogo Pass, the strong defenses of Futa Pass were completely outflanked. Futa Pass fell on 22 September without fighting. By that time, Fifth Army had broken through the Gothic Line on a 30-mile front and was ready to continue the attack toward the Po Valley.

Conclusions

This campaign is a classic in many ways. The inability of the Allied forces to continue the pursuit beyond the Arno River, and the prior preparation of the Gothic Line by the Germans, made necessary a co-ordinated assault. Certainly the enemy's use of the natural defensive barrier of the mountains, to enable him to concentrate his forces in the few favorable approaches, is a model for this type of defensive operation.

The coastal attack by the British Eighth Army succeeded in drawing much of the enemy strength away from Fifth Army's sector. During the battle, the enemy fought hard and tenaciously but suffered losses which could not be replaced. Hard hit by artillery fire, air attack, and infantry assault, the enemy losses kept mounting. The inability to replace these

losses was a major factor in the final break-through.

This was a battle for roads. The actions were fought on and for the terrain features which dominated the roads. The defenses were concentrated on these dominating terrain features. Two factors combine to make roads all-important in mountain operations. There are few roads available, and cross-country movement is not feasible. Both of these factors were considered by the defender in his preparation of the Gothic Line.

All of the problems which beset the attacking forces are to be expected in mountain operations. The failure of signal communication experienced by the small units in the battle for Mount Altuzzo had far reaching effects. The lack of co-ordination in the efforts of the 91st and 85th Divisions in the second attack on Mount Altuzzo was a direct result of communications failure.

Success in mountain operations depends on small unit actions. The break-through of the Gothic Line—planned by an Army Group, initiated by Eighth Army's attack on the Adriatic Coast, continued by Fifth Army's pressure on the mountain defenses, and brought to a high point by II Corps' attack on Futa and Giogo Passes—was finally accomplished by the capture of a key point in the line by a single battalion.

Mountain warfare is characterized primarily by difficulties which terrain offers to movement. The restricted nature of narrow valleys and defiles limits the strength of forces which can operate efficiently therein. The inadequate road net found in sparsely settled mountain areas enhances the military value of existing roads, adds importance to heights which dominate them, and slows down the operations. Critical terrain features consist of heights which dominate valleys and lines of communications with observation and fire; passes which permit movement through mountains; and roads and railroads which must be secured for supply purposes.

TRAINING SUPPORT

Lieutenant Colonel Charles J. Denholm, *Infantry*
Instructor, Command and General Staff College

DURING World Wars I and II, the United States had allies who fought the common enemy until the United States combat forces could mobilize and train. In neither War was the United States required to mobilize and train a single division in the first year of the War. Developments in weapons and transportation, which made the *blitzkrieg* of the Germans possible, have continued. As a result, it is unlikely that the United States will ever again have a long protected mobilization and training period.

During World War II, the average United States division had 3 years to train; in no case was a division used that did not have at least 18 months' training. With the threat of *blitz* war as it exists today, it is possible that the United States will have no longer than a few months to train the large forces which will be committed to action during the first year of any future war.

To change our methods or techniques of training so that a training cycle of say 6 months will produce as well qualified a division as the 3 years' training period did during World War II is one of the major problems that confronts the United States. This article will attempt to point out some of the differences in training a

regular army division in peacetime in contrast to training a division during a future mobilization period, and to indicate some of the changes which must take place in the field of providing training aids, areas, and facilities to shorten the training period.

Factors Affecting Training Support

There are two principal factors that affect the training support required by a division during a mobilization period, as contrasted to a peacetime training period. First, there is the time available. Second, there are the qualifications of the division's personnel.

During periods of peace, unlimited time is available for training. With unlimited time available, little support need be given units and they can develop and construct for themselves the aids and facilities they consider most suited to their needs.

During periods of war, a definite limited amount of time is available for training. Training must have as its goal the preparation of the unit for combat within the time available. As a result, training must be efficient. The time must be spent in reaching the unit's goal and not in research, development, or construc-

There are many differences between the training support requirements of divisions during mobilization and during peacetime. Principal factors are the time available and the qualifications of personnel

tion of aids and facilities which should be provided by higher headquarters.

During periods of peace, the bulk of the officer and noncommissioned officer personnel in the Army is stable. This permits training in the position held by each individual, and advanced training to fit each individual for promotion.

During periods of war, the rapid expansion of the Army demands the advancement of all personnel to jobs in which they have had little or no experience and, in some cases, for which they have had no training.

Peacetime Factors

Other factors that affect the training support required by a division in peacetime are listed below:

Diversity of missions. Each division has numerous training goals, such as training for disaster relief, civil disturbance, maneuvers, and combat.

Arrival of fillers. Fillers arrive at the division in many small increments. This necessitates the running of many similar but staggered training programs by the division.

Units are stable. Units are permanently stationed at one place. This permanence permits units to build, during the course of several years, permanent and elaborate training aids and facilities which are used year after year. However, not having a rapid time schedule to maintain, units do not need as much equipment or as many facilities or training aids as in wartime. Men can be rotated through minimum facilities, aids, and equipment.

Subject stress. Stress is placed on many non-combat subjects such as drills, ceremonies, inspections, and appearance of the post.

Stations. Units are split between different stations, making combined training and supervision of training difficult, or impossible, by the division.

Guide programs. While units have some

compulsory subjects which they must take, much of the training program is left open so that the unit can adjust to the many duties, other than training for combat, which it must perform.

Budget. The political and economic situation of the United States determines the quantity of new equipment, ammunition, maneuver support money, and other training necessities obtained by the Army. The actual needs of the Army have little to do with its size or the amount of money allotted it in the national budget.

Wartime Factors

Other factors that affect the training support required by a division in wartime are listed below:

Single mission. Each unit has one mission: "to train for combat."

Arrival of fillers. Sufficient fillers to bring the division to full strength generally arrive as a single group with subsequent personnel losses replaced by trained men. This procedure permits the division to run a single training program.

New units. Units are newly formed and possess no training aids or facilities of their own. Aggravating this lack of training aids and facilities is the inexperience of the units' trainees and instructors, which creates the demand for additional aids and facilities.

Essential subjects. Subjects not essential to combat can be eliminated from the program.

Unit stations. Units are grouped in division or larger posts making control and supervision by regiment and division possible.

Training programs. Units have a detailed, complete, compulsory schedule to follow in the wartime training program.

Budget. Necessary equipment and money support for the Army is limited only by the ability of the country to provide them.

Comparison of Training

In comparing peacetime training with wartime training, we note that during peacetime most of the training difficulties can be ultimately overcome and units kept to a high standard of training with little training support from higher units. The experience level of the personnel combined with the time available and the minimum need for equipment, facilities, and aids, overcomes most obstacles.

In wartime training, the obstacles to peacetime training have disappeared and the major training obstacle to surmount is the inexperience of the division's personnel in the jobs they hold, combined with the dearth of aids, facilities, and suitable areas that are needed to train the division in the short time available.

Provisions for Training Support

In peacetime, little or no aid is given to battalions or smaller units in securing aids or facilities for training. The conditions of peacetime place the major responsibility on small unit commanders to locate training areas, to provide training facilities and aids, and, in general, to train for themselves.

In wartime, the essential training problem is to have the division absorb, in the time available, the knowledge essential to successful combat. In this case, it is the responsibility of higher headquarters to provide the means necessary to complete the training program with a proficiency above the set standards and within the time allowed. Thus, if no pressure of time or need for efficient training exists, little or no aid need be provided divisions. However, if the predicted shortage of time exists in a future war, each division will have to be provided all the actual aids and facilities needed to reach its training goal. Responsibility for the provision of training areas, facilities, and aids rests at many levels of command.

The Department of the Army has the first responsibility for training facilities and aids, and meets this responsibility by—

1. Establishing policies for the procurement and development of training sites.
2. Establishing policies for the development and manufacture of training aids.
3. Providing, through budget processes, funds for local supplementation of training facilities and aids not otherwise furnished, such as rental of maneuver grounds.
4. Co-ordinating all training matters with the Departments of the Navy and the Air Force, at department level.

The Office, Chief, Army Field Forces, is the Department of the Army's principal operating agency in the field of training. In this capacity, it takes active measures—

1. To establish actual requirements for facilities and determine the suitability of existing facilities.
2. To initiate, develop, review, and revise the training aids for training an army in the field, and co-ordinate an integrated program for their production.
3. To prepare estimates for funds necessary to ensure fulfillment of assigned training missions.
4. To prepare timely plans for joint training in the Zone of Interior; after approval by Department of the Army, co-ordinate plans with appropriate echelons of the Navy and the Air Force. (For example: use of planes, landing craft, and the like.)

Army commanders meet their responsibilities by—

1. Use of funds.
2. Rotation of available aids.
3. Administering Department of the Army policies within the army areas.

Division commanders, and other commanders in the field—

1. Exploit the resources—
 - a. Standard items available.

b. Standard items obtainable from higher headquarters.

2. Supplement from local sources where necessary.

Mobilization Period

Condensing training programs from 9 months or longer to a shorter period greatly increases the instructor's burden. Desirable but non-essential subjects are omitted from the training program, while many essential subjects have their time

preparation time is reduced, his presentation must be most effective; in a shortened training schedule, there is little or no time to repeat instruction that is not understood. When this large instructor burden is given to inexperienced or partially trained instructors, it will be insuperable without help from higher headquarters. The nature of that help must in general be as follows:

Training programs. Mobilization training programs (MTP's) will be required

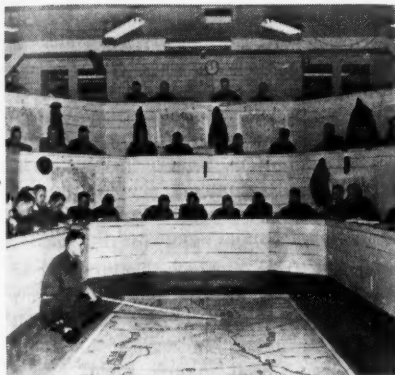


The efficiency of instruction can be greatly increased by aids such as this tank turret trainer. With such a trainer, one instructor can handle many students.—US Army photo.

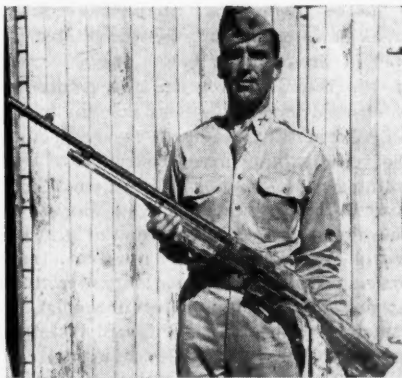
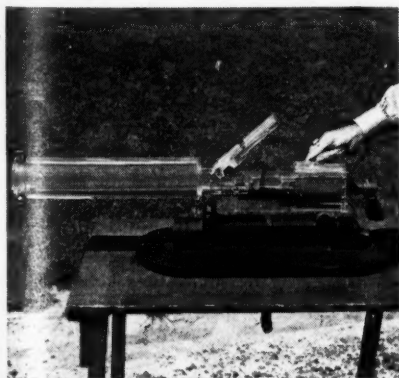
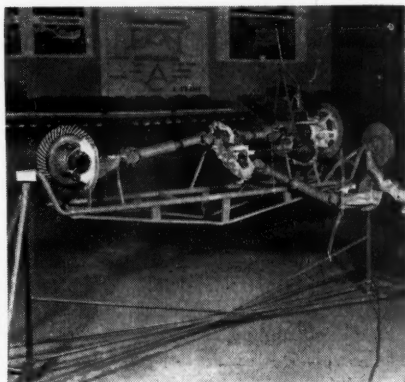
allotment cut. These subjects include drill, ceremonies, inspections, free time, and commander's time. These are the same subjects that require little or no prior preparation on the part of the instructor, and since these subjects are replaced by subjects that require preparation, his available study and preparation time is reduced.

At the same time that the instructor's

for each unit down to and including companies. These programs should give all the information contained in the World War II MTP's and the new army training programs (ATP's) combined, plus much additional information. World War II MTP's provided for cadre training, schools, and the detailed training program for the unit. This detailed program listed subjects and hours for each week of the training



Many training aids and facilities have been devised to improve the effectiveness of military training. Above, left, a classroom with the students' desks in tiers for greater visibility of the exercise being conducted by the instructor. Above, right, a terrain model showing the organization of an engineer combat battalion in defense. Right, a cut-away exhibit of a motor transmission, differential, and front wheel drive for use in transportation classes. Below, examples of weapons built up with plastics to permit students to see the working of the internal mechanism; left, water-cooled .30 cal. machine gun; right, automatic rifle.—US Army photos.



cycle and included a list of possible references.

The new ATP's go further and include the objective and scope of each subject scheduled and add to the list of references the projected aids and GTA's (charts and posters published by Department of the Army) that are applicable to the subject. New MTP's must include a list and description of all the subject schedules, areas, facilities, and aids needed to complete the MTP. This listing is absolutely essential if the program is to be completed successfully.

At present, there is no method short of weeks of research by a staff by which any headquarters can determine an approximate list of the aids which might be applicable or available. This research system did not work well during World War II, and it will not work at all under a shorter training period. FM 21-8 purports to list the training aids necessary for training. Actually, only a few of the aids are listed in this manual. To determine what aids are available, a study must be made of all the field manuals, technical manuals, army regulations, special regulations, memoranda, and letters. Examples of important aids for mobilization training not listed in FM 21-8 are disassembly mats and moulages.

Subject Schedules. Subject schedules break down each hour's instruction scheduled in the MTP by giving the objective of the hour's instruction, the points to be covered during the hour and the number of minutes to be spent on each point, the type training area required, and the training aids facilities and equipment required. Subject schedules were not available for units that trained at the start of World War II. Later in the War, they came into use and proved very effective. At present, the only subject schedules in use support the National Guard training program. These subject schedules are excellent, but for mobilization use they

should give additional information. The description of the type area should not be general but should be specific, listing not only that the area is a classroom or an outdoor area, but the specific size and features that should be sought for a suitable area. Descriptions under training aids, facilities, and equipment should list each item required, plus optional items, and not merely a partial suggested list.

Reports from combat theaters during World War II indicated that if the Army had a training fault it was in the unit phase of training. To correct this fault, the Office, Chief, Army Field Forces recommends that each division draw up standard tactical problems for units. This phase of training is so important that subject schedules or other devices must be issued which suggest many standard problems and methods of running them. Subject schedules must not be confined to non-tactical subjects, but must cover each hour in every MTP.

Training Areas. The location of many Army posts has been determined by the need for protection from the Indians, for political reasons, or for other reasons divorced from the presence of good tactical training areas. The primary requisite of a training post is that it have good tactical training areas. In peacetime and during World War II, the Army hobbled along with these poor posts by sending entire units or parts of units to more favorable areas to complete their training, or was forced by the press of time to commit them to action with inadequate unit tactical training. With a shortened training period, there will be no time available for shipping units around the country for training. The Army must locate posts with adequate areas for unit tactical training. The addition of tanks as organic equipment in the infantry and airborne divisions has greatly increased the tactical and range areas required.

This increased requirement has made many of the camps that were satisfactory for World War II unsatisfactory for a future world war.

Training facilities and aids. Training programs for periods of 9 months or longer have sufficient flexibility so that facilities and aids can in many cases be rotated. When a training schedule is shorter than 9 months, very little or no rotation of facilities or aids is possible. This situation results from the fact that the essential military training is progressive. For example, a man cannot fire in a combat problem until he knows how to fire his rifle. In addition, the subjects, such as drill and ceremonies, that would permit rotation have been removed from the program.

With no time available to repeat instruction that is inadequately absorbed, instruction must be as efficient as possible. To this end, training aids must be provided which will increase the efficiency of instruction. The cost of this type of aid, and the time available, often eliminates its use in peacetime, which in turn causes the aid to be forgotten or not available in wartime. An example of this type aid is the tank turret trainer. With the tank turret trainer, one instructor can efficiently handle many students. Without the tank turret trainer, the instructor must have a tank per pupil, and he can only handle one pupil at a time. Many other similar type aids are required in this field, such as cut-away motors and plastic guns.

The inexperience of instructors neces-

sitates aids that would not be required by a more experienced group. An example of this type of aid is the disassembly mat to be used with weapons.

Lastly, the aids must be designed and provided to meet the expected training program. The fact that a present day division would or would not use an aid has nothing to do with its mobilization use.

Progress

Signs that Department of the Army and its agency, the Office, Chief, Army Field Forces are gradually solving some of the problems mentioned are evident in the following:

The change from the MTP's to the ATP's.

The recently inaugurated National Guard training program, which is supported by subject schedules.

The division camp, which is functionally arranged to increase training efficiency, which appeared in the *Report of Activities AFF* for 1949.

The instructions to boards, who are developing new equipment, which requires them to develop training aids for each new item of equipment concurrently with the development of the item of equipment.

The recently approved plans to set up training aid centers in each army area.

The program for the revision of training manuals, and the preparation of new ones in new military fields, with emphasis upon development of joint doctrines.

The participation of the Army with the Navy in the Navy Special Devices Center, starting in fiscal year 1952.

Training is a major weapon of modern warfare. It is a vitally important part of our national defense effort.

Rear Admiral Thomas L. Sprague

United States Foreign Policy and the Armed Forces

Mark S. Watson

Historical Division, Department of the Army Special Staff

This is the second of two articles based on a chapter in Mr. Watson's forthcoming book entitled The Office of the Chief of Staff: Prewar Plans and Preparations, in the series, The U. S. Army in World War II. Copyright 1950 by Orlando Ward; permission for reproduction may be obtained on request from the Chief, Historical Division, Special Staff United States Army, Department of the Army, the Pentagon, Washington 25, D. C.—The Editor.

PART II

THE outbreak of the war in Poland on 1 September 1939, startling to the public, confirmed military observers' expectations in many respects. The quiet which fell upon Europe immediately after the conquest and partition of Poland, and which was prolonged through the winter of the "phony war," lulled the fears of only the uninformed, but the uninformed were numerous. It was on 23 February 1940 that General Marshall, arguing before skeptical members of the House Appropriations committee, reminded them that, "if Europe blazes in the late spring or summer, we must put our house in order before the sparks reach the Western Hemisphere."

In April it did blaze, and in May it blazed so high that again there were expressions of rising concern over Western Hemisphere security. On 21 May, the Chief of Staff was given an unsigned memorandum, presumably from the Secretary

of the General Staff, reading: "In view of the present world conditions, it is believed that this country should take immediate steps to acquire British and French possessions in the Atlantic." This early suggestion of a measure ultimately achieved in effect by the destroyers-for-bases transaction, brought no recorded action, but the memorandum bears a notation "Chief of Staff has seen."

On 22 May, the day after the victorious Germans reached the English Channel, Major (later Lieutenant General) Matthew B. Ridgway, with other WPD members, submitted to the Chief of Staff a memorandum on National Strategic Decisions, occasioned chiefly by the German triumph in France. It noted the old and new menaces to the United States, including Japanese attack and Nazi-bred revolts in South America with actual Nazi invasion of South America now rendered likelier by the Allies' disaster. It pointed out that dispersal of American forces to all the points endangered—the Far East, the Western Hemisphere, and the European theater—was out of the question, and that there must be a decision on which area was of first importance. Decision was needed on what the Army must be prepared to do and what it would be able to do within 1 year. The maximum effort which America could exert, Major Ridgway felt, would comprise "conduct of offensive-defensive operations in South America in defense of the Western Hemisphere and of our own vital interests; such

limited offensive operations in Mexico as the situation may require; possible protective occupation of European possessions in the Western Hemisphere; and the defense of Continental United States and its overseas possessions east of the 180th meridian." This, it will be noted, accepted as tolerable the loss of Wake as well as Guam and the Philippines.

On the following day, General Marshall reported having shown the memorandum to the President, Admiral Stark, and Under Secretary Welles, the first two "in general agreement . . . and specifically Mr. Welles. They all felt that we must not become involved with Japan, that we must not concern ourselves beyond the 180th meridian, and that we must concentrate on the South American situation."

On the following day, 24 May 1940, accordingly, the Joint Planning Committee

Joint Army-Navy War Plan No. 4 (*Rainbow No. 4*). After 2 more days, the Joint Board considered this draft of the plan of action, to cope with the situation in the Western Hemisphere which would follow defeat of Great Britain and France, agreeing that "the date of the loss of the British or French fleets automatically sets the date for our mobilization" of the National Guard.

So urgent was this project, with France nearing its military collapse and the British preparing to move back across the Channel with all celerity, that deliberations were completed in 10 days, and on 7 June the Joint Board adopted the plan. It was approved by the Secretaries of War and Navy on 13 June.

The rapidity and gravity of military events on the English Channel—watchfully observed in Italy and Japan as well

Elements of US foreign policy developed after the fall of France in 1940 included defense of the Western Hemisphere, continued aid to Britain, and defeat of Germany as the main objective in case of war

received instructions from the Chief of Staff and Chief of Naval Operations to prepare plans "for occupying Allied and Dutch West Indies and American possessions, to prevent such from falling into the hands of Germany by surrender or cession." On the next day, the President asked the navy and military chiefs to have plans prepared for support of the Brazilian government and for prevention of revolts in Brazil inspired by the Axis. Two days later, the draft of Joint Army and Navy plan *Pot of Gold*, for this purpose, was submitted to them.

On 28 May, the Navy WPD gave to the Chief of Naval Operations the larger plan (of which *Pot of Gold* was an implementation) for occupation of Allied areas in the Hemisphere. In this, the War Department WPD was in general concurrence, and, upon adoption, this became known as

as in Washington—was a constant spur to new and quick decisions. Several such decisions were made by the Navy Department for, as previously noted, it was the Navy which was much more nearly prepared for action and hence capable of taking it. Late in May, the US Naval Attaché in London, with advance approval from the Admiralty, recommended to his superiors the assignment of officers as observers with British fleet units, and this met with approval. While not immediately related to much more important agreements which followed, it is suggestive of increasing receptivity to co-operative suggestions. For this, the disturbing state of British affairs and its effect on American prospects must have had some responsibility.

On 14 June, when in fact *Rainbow No. 4* was already approved, the Naval Attaché

in London (Capt., later Admiral, Alan G. Kirk) advised his superior that, "In my view, safety of United States would be definitely in jeopardy should British Empire fall, and would expect Italo-German combination to move swiftly in South American and Caribbean areas . . . safety of Canal seems paramount."

Mr. Churchill, writing as "Former Naval Person," had already resumed his correspondence with President Roosevelt, making his initial request on 15 May 1940 for "the loan of 40 or 50 of your old destroyers," among other things, and on 20 May, accepting a temporary repulse of his suggestion (via Lord Lothian, the British Ambassador), but restating the hope which would in fact be gratified later in the year.

As the scope of disaster in France increased, the British War Cabinet and Chiefs of Staff Committee increased their discussions of American relations. On 15 June, the Admiralty named a special committee, headed by Sir Sidney Bailey, to review the form of American aid to be sought, the possible areas of British and American operations and the two fleets' responsibilities in those areas, the preferred policy of co-operation, and the techniques of imparting information to United States authorities. It was 5 days later that the British authorities announced their intention to propose informal conversations either in London or Washington between the American and British staffs.

The completeness of France's defeat, meantime, was arousing anxieties not only about the immediate future of Europe and, in America, that of the Western Hemisphere, but about that in the Far East as well. On 17 June 1940, when the despairing Marshal Pétain asked his German conqueror for armistice terms, observers in Tokyo, who had for months been aware that Japan was engaged in troop-training exercises in Formosa and near Hainan, expressed their suspicion of what these

units were being trained for. From the US Embassy in Tokyo came a warning that "Soviet and British attachés here are speculating with regard to possible Japanese invasion of Indo-China in event of capitulation of France."

Within WPD, there was a further suspicion that such an invasion might be preceded by a Japanese assault upon the Panama Canal or upon the naval base at Pearl Harbor. This surmise, not far in principle from the ultimate reality of December 1941, was laid before the Chief of Staff by Brigadier General George V. Strong, acting WPD, and led to General Marshall's sudden order, transmitted to Army commands both in Hawaii and Panama, for an immediate alert of the defensive organizations "to deal with possible trans-Pacific raid, to greatest extent possible without creating public hysteria or provoking undue curiosity." The alert in Hawaii continued for months without an official explanation of its immediate cause.

It was apparent, however, that the rushing events in Europe would affect much more than Japanese ambitions. The several possibilities General Marshall discussed that day, 17 June 1940, at a staff conference attended by the chiefs of his WPD, G-3 and G-4 divisions:

... We may suddenly find Japan and Russia appear as a team operating to hold our ships in the Pacific. If the French navy goes to Germany and Italy, we will have a very serious situation in the South Atlantic. Germany may rush the South American situation to a head in a few weeks.

Are we not forced into a question of reframing our naval policy, that is [into] purely defensive action in the Pacific with a main effort on the Atlantic side? There is the possibility of raids. . . . The main effort may be south of Trinidad with action north thereof purely on the basis of a diversion to prevent our sending matériel to South America. This seems to indicate that we should mobilize the National Guard.

... Should not Hawaii have some big bombers? ... It is possible that our opponents in the Pacific would be four-fifths of the way to Hawaii before we knew that they had moved. . . .

The closing conjecture, it developed on 7 December 1941, was a one-fifth understatement, and several of the other con-

jectures never came to pass. But the remarks of 17 June 1940 are impressive as marking the Chief of Staff's acceptance of his advisors' reasoning on the priority in importance of an Atlantic war which might come, even though the President did not enunciate it until much later. It would appear that the Navy's emphasis up to now on operations in the Pacific was due to the long-standing assumption that the British-French navies would provide reasonable security in the Atlantic. Without that assumption, first emphasis had to be on Atlantic needs. In neither Army nor Navy commands was there a doubt that war involvement was close. The uncertainty was, rather, over the quarter in which the United States would first become involved and over the means and methods of response. Hence the necessity not of one but of all five *Rainbow* plans to meet varying contingencies, and the further necessity of knowing much more of British plans.

To the Joint Board's direction to develop both *Rainbow No. 3* and *Rainbow No. 5* were soon added more immediate instructions, from the President himself, for the guidance of both Army and Navy in their planning. On 13 June, Mr. Roosevelt asked that the intelligence chiefs of Army and Navy examine certain assumptions which he submitted and consider the conclusions to be drawn from them, as to the probable course of the war. The intelligence chiefs sought advice from the planning sections of the two Departments, and on 26 June there evolved a considered reply which Colonel F. S. Clark, of Army WPD, and Captain C. J. Moore, of the Navy (senior members of the JPC) tendered to General Marshall and Admiral Stark. By that time, the reply had been effectively superseded by a joint effort on the part of General Marshall and Admiral Stark to get from Mr. Roosevelt clear instructions for their own guidance, necessitated by the disasters then being in-

flicted upon the Western Allies by Germany.

The extreme gravity with which WPD was then viewing Britain's plight is shown by a 17 June memorandum from General Strong, recommending that three radical revisions of current policy be considered with Admiral Stark, prior to discussing them at the White House. These proposals were for (1) a purely defensive position in the Pacific, this involving "non-interference with Japanese activity in the Orient"; (2) no further commitments for furnishing matériel to the Allies, this being in "recognition of the early defeat of the Allies" and of the "probability that we are next on the list of victims of the Axis Powers and must devote every means to prepare to meet that threat"; (3) immediate mobilization of the national effort for Hemisphere Defense, including increase of the Regular Army, early mobilization of the National Guard, marked increase of munitions production, preparation for "protective seizure" of British and French colonies in the New World, and military aid to Latin America.

General Strong's bold recommendations were not accepted. What actually went to Admiral Stark for consideration on that same day, 17 June, was a much longer and more exploratory discussion of three more moderately stated alternatives which the President would be asked to consider. These were (1) to maintain a strong position in the Pacific and, in order to do so, "to avoid any commitment elsewhere"; (2) to make every effort "including belligerent participation" to sustain Great Britain and France in the European war; and (3) to initiate operations "to prevent or overthrow German or Italian domination or lodgment in the Western Hemisphere."

Although the gloom apparent in General Strong's expressions lessened as day after day passed without new threats of an invasion of Britain, both Army and Navy

chiefs had responsibilities which needed guidance more substantial than mere hope for the future. Using the milder of the two 17 June memoranda as a basis for discussion, they devoted ensuing days to a study of the military prospect. By 22 June, they came to agreement on the draft of a "Basis for Immediate Decisions Concerning the National Defense," which they felt necessary for the conduct of national defense, but which necessarily would have to be made by the President as Commander in Chief. This proposal General Marshall and Admiral Stark together presented to the President, whose oral comments were hastily jotted down by General Marshall and later furnished to the Chief of WPD.

First in the policy suggestions, consideration was given to the location of the US Fleet, then based at Pearl Harbor. The two chiefs agreed that if the French fleet should pass to German control, the major portion of the US Fleet should be transferred to the Atlantic.

(In General Marshall's notes, the President was quoted as saying, "Yes—but decision as to return of the fleet from Hawaii is to be taken later.")

Second, the continuing question of arms to Britain. The Chiefs believed that "to release to Great Britain additional war material now in the hands of the armed forces [large lots of reserve small arms and artillery had been released after Dunkirk], will seriously weaken our present state of defense and will not materially assist the British forces." They recommended no further commitments of this sort and also recommended acceptance of no commercial orders which would retard the American forces' procurement.

(Mr. Roosevelt said, "In general, yes," but in extending his remarks made material qualifications. The Army and Navy "would continue to search over our matériel to see if there was something" to release; "decision . . . would have to depend on the situation"; if "a little help"

seemed likely to carry Britain through the year, "we might find it desirable from the point of view of our defense to turn over other matériel . . ." Commercial orders would be accepted as long as matériel could be employed to block Germany and "without seriously retarding" Army and Navy procurement.)

Third, the defense of the Hemisphere. The Chiefs believed it might involve occupation of British, French, Dutch, and Danish possessions in the Western Hemisphere (including islands of the Atlantic and Pacific), excepting always Canada and Newfoundland. This would be done in time to prevent cession of these possessions to Germany through a treaty.

(Mr. Roosevelt excepted the Falklands, possibly because of Argentina's claim to those Islands, and specified that the occupation should be only "after consultation with, and if possible in agreement with, the other American Republics." He thought the international date line might mark the westward limit of occupation.)

Fourth, and also with regard to Hemisphere Defense, the Chiefs proposed to occupy other strategic positions in the Caribbean and in Latin America "in accordance with the agreements now being completed with the American Republics."

(The President phrased it "when the agreements . . . provide therefor.")

Fifth, American support of existing governments. The Chiefs recommended that this be undertaken only on a widely publicized request from the country concerned and only when US forces could be spared for that purpose. Nothing could be undertaken south of Venezuela before December 1940, save through immediate mobilization and an effective draft act. It was on 24 June that the Burke-Wadsworth bill for the draft was introduced in Congress.

(The President approved with only one wary addition—that this policy would stand "on a day-to-day basis.")

Sixth, arms for Latin America. The Chiefs recognized the impossibility of any excess for this purpose, save for rifles and machine guns for which there could be no ammunition before March 1941, and recommended only credits for such purchases should the possibility improve.

(The President, with a somewhat breezy comment, approved such aid as would not hamper the American rearming program.)

Seventh, economic adjustments with Latin America proposed by the Chiefs would recognize that losses were a proper charge to national defense.

(The President approved without change.)

Eighth, a speed-up of arms production at home. On this, the Chiefs recommended a longer working week and establishment of 2-shift and 3-shift operations until more workers should be trained. Also, mechanical education for many of the unemployed.

(Here they ran into a stone wall. The President stated that until the unemployed were more largely at work he would not alter the existing 5-day week. He wished the arsenals and manufacturers to be pressed into this training work. If that failed, other means would be tried.)

Ninth, a speed-up also of man power. The Chiefs proposed immediate enactment of a selective service act "along the lines of existing plans, to be followed at once by complete military and naval mobilization."

(The President changed "complete" to "progressive," and he indicated his dislike for the draft plan itself, outlining "at considerable length" his own views. At that time, he wished a year of some sort of service for the government by each youth at 18, or on graduation from high school. Some would be in Army and Navy, or in production work in arsenals and factories, or in mechanical training, others in the Civilian Conservation Corps or an equivalent. All should be "in camp" for

such a period. Of this Presidential project, no more was heard. The Burke-Wadsworth bill, already prepared and introduced on 24 June, was employed only to produce military man power.)

The 22 June proposals, plus the 24 June memorandum to General Strong, were thereupon worked over by Colonel Clark and Captain Moore, the Joint Planning Committee, who had previously considered the President's 13 June inquiry. On 27 June, General Marshall and Admiral Stark laid before Mr. Roosevelt a revised and carefully phrased "Basis for Immediate Decisions Concerning the National Defense." It recommended for the immediate future (1) a defensive position by the United States; (2) non-belligerent support of the British Commonwealth and China; (3) Hemisphere Defense, including possible occupation of strategic bases on the soil of Allied Nations' western colonies in case of those nations' defeat; (4) close co-operation with South America; (5) speeding of production and training of man power, including a draft act and "progressive" mobilization; and (6) preparation of plans for the "almost inevitable conflict" with the totalitarian powers, to assure concerted action with other nations opposing Germany, Italy, and Japan.

British readiness at this season for concerted planning in advance of involvement in the war has already been mentioned, as indicated by the naming of the Bailey committee on 15 June and the prompt proposal to initiate Staff conversations. Lord Lothian, the British Ambassador in Washington, with a recollection of the fruitful services of Admiral William S. Sims, USN, as a Special Naval Observer in London in 1917, suggested to President Roosevelt in 1940 the sending of another senior American admiral, and the idea so impressed the President that he discussed it with the Secretary of the Navy (Frank Knox) and Admiral Stark.

On 12 July, they proposed Rear Admiral (later Vice Admiral) Robert L. Ghormley, the Assistant Chief of Naval Operations, who was already fully informed on naval planning. This was approved and, with the Navy engaged in preparing detailed instructions for Admiral Ghormley's guidance, the President determined to send in addition, but for a briefer period of duty, a representative of the Army. The selection fell upon General Strong, who was similarly qualified through his detailed knowledge of Army planning, and shortly thereafter Major General Delos C. Emmons, commanding general of the GHQ Air Force, was added, evidencing understanding of the large part which aviation would play in the proposed discussions in London. The three received oral instructions from the President on the subjects about which they would confer, and sailed for England on 6 August aboard the *S.S. Britannic* on what was supposed to be a secret mission; 2 days later the ship's radio picked up a radio news broadcast announcing the mission.

Although it was well understood on both sides that the ensuing London discussions would deal with many matters of joint Anglo-American planning and possible co-operation, particularly on the part of the two fleets, the meetings were referred to officially as those of "The Anglo-American Standardization of Arms Committee." The American visitors, now joined by the US Naval Attaché, Captain Kirk, and the US Military Attaché, Colonel (later Brigadier General) Raymond E. Lee, made clear that they were present as individuals, not an organized mission, and that their powers were limited to discussion and recommendations.

Even so, the importance which the British attached to their visit is suggested both by the composition of the British group (which included Admiral of the Fleet Sir Dudley Pound, General Sir John Dill, Chief of the Imperial General Staff,

and Air Chief Marshal Sir Cyril L. N. Newall, Chief of the Air Staff) and by the candor with which Sir Cyril discussed the relationship of arms production to strategy!

... In our plans for the future, we were certainly relying on the continued economic and industrial co-operation of the United States in ever-increasing volume... [They] were fundamental to our whole strategy.

The British Chiefs of Staff had already presented at length their conception of future strategy in the war in great detail. Now, replying to insistent questioning about various theaters and, particularly, about British commitment in the Far East, they admitted that, important as was Malaya, they were not ready to support Singapore at the cost of security in the Atlantic or the Mediterranean. It was an admission which was bound to influence American thinking on strategy in the Orient. General Strong at this same meeting referred to the bases for these informational exchanges and then made a suggestion of which more would shortly be heard, to the effect that

... It had been agreed in principle between the British and the United States governments that a periodical exchange of information would be desirable. He thought that the time had now come when this exchange of information should be placed upon a regular basis. He outlined several methods by which the sources of information at the disposal of the United States might be placed at the disposal of the British Government.

The exact extent to which these London discussions of "standardization of arms" contributed to Staff knowledge of munitions is not determinable from the records consulted, but General Strong returned to Washington with well-formed ideas on the relationship of arms and strategy.

On 23 September, the Chief of Staff gave oral directions to WPD for a report on this rapidly mounting problem. Study to that end had been under way for weeks, and consequently on 25 September WPD presented its 10-page memorandum, which

discussed munitions problems against a background of strategic considerations, including those lately considered in London. Actually, it was the fruit of work by a group made up not only of the WPD Staff, but also of Colonel James H. Burns of the Assistant Secretary's office, the Assistant Chief of the Air Corps, and the Navy members of the Planning Committee.

It estimated the current munitions situation, and came to grips with the main purpose, which was to point out, in the words of Section III: "Necessary additions to the national policy covering release of munitions and production capacity to Great Britain and other nations." With the Draft Act newly passed, and the first elements of the National Guard moving off to camp in that month, the Staff was conscious of the large problems of future matériel, as well as those of the new personnel. The Staff members' long memorandum accepted without demur that the war's first threat and chief demands would be in the Atlantic; recognized also (with powers of discernment which would be proven 2 days later when Japan announced affiliations with Germany and Italy) that trouble in the Pacific was near; and set forth the policy of keeping the Pacific operations secondary to those in and near the Atlantic.

It recognized, as a first consideration, that all three Axis powers might open hostilities with the United States in order to counter the continuing United States opposition to them. Germany and Italy could not do so immediately, but it was pointed out that Japan's expanding self-confidence and aggressiveness might soon lead that nation into action which would require the United States to choose between armed opposition and modification of its Far East policy. Should Gibraltar ultimately be lost and Dakar thus opened to the Axis, the resultant exposure of South America might require diversion of a part of the United States Fleet to the

Atlantic, weakening the existing defense against Japan.

It was "well recognized that it would be imperative . . . to anticipate . . . action [if Germany should actually move against South America] by the preventive occupation of the airfields and ports. . . ." It was recognized that, in the event of the Iberian peninsula's being drawn into the Axis orbit, the Azores, Canary, and Cape Verde Islands, if not immediately occupied by British or United States forces, would be taken by Axis forces as operating bases. That these events were not immediately likely did not bar General Strong (the group's spokesman) from feeling that "a part of the responsibility of the United States should be to be prepared to meet the worst possible situation." Likelier than the contingencies named, General Strong felt, was (1) an intensification of existing German infiltration into South America, aimed at upsetting governments "which we have undertaken to support," and (2) a resultant acquisition thereby of bases for German naval raiders in the Western Atlantic.

As to the Pacific prospect, it was pointed out that there could be no assurance that Japan would not shortly move against the Dutch East Indies or the Philippines or Guam, especially in view of the American embargoes on exports to Japan, and in the event that the American protests should be regarded as bluff. Within the near future, then, the United States might be confronted with a demand in the Far East for a major effort for which, WPD gave warning, "we are not now prepared and will not be prepared for several years to come."

Along with this realistic discussion of Far East realities were further advices on the Atlantic. Thus, if it developed that the British fleet might be lost, "from that very day the United States must within 3 months securely occupy all Atlantic outpost positions from Bahia . . . to . . .

Greenland." And "at any time . . . the United States may be required to fulfill its commitments for the employment of . . . forces to prevent German-inspired upsets of Latin-American Governments." And "in order to safeguard our own security the United States may at any time, even before collapse of the British fleet, need to occupy preventively Dakar and the Azores." For all or any of these measures, the military was not ready, owing to insufficient numbers of trained men and insufficient munitions for their equipment. The supporting evidence, in terms of men and percentages of supplies on hand, was incorporated in the memorandum.

It is not clear whether Mr. Roosevelt actually read in full this long and careful discussion, but its recommendations, implicit or explicit, evidently were communicated to him in one way or another. The influence of the reasoning is discernible long afterwards in 1941 plans, some of which were carried out (as in the case of cautious restraints in diplomatic negotiations with Japan, and the continued garrisoning of the Atlantic outpost bases), some of them abortive (as in the case of the possible dispatch of an expeditionary force to South America, and the occupation of the Azores which was at one time scheduled).

The influence of Army insistence upon priority of interest in the Atlantic, voiced on so many occasions in 1940, was now affecting the Navy as well. It was manifest on 5 October, at a meeting of the Standing Liaison Committee (at which General Strong was present) when Mr. Welles read a message from Prime Minister Churchill to the President requesting that an American naval squadron be sent to Singapore. In the ensuing discussion of the Far East situation, there was agreement that no squadron should be sent, lest it precipitate Japanese action against the United States, Admiral Stark observing

that "every day that we are able to maintain peace and still support the British is valuable time gained," and General Marshall that this was "as unfavorable a moment as you could choose" for provoking trouble.

The Chief of Staff went further than his naval colleague in favoring withdrawal of the Marine garrison from Shanghai, on the ground that it was "inconceivable" that an attack on them could be avoided. He confessed that his views were probably at variance also with those of his civilian chief, Secretary of War Stimson, and on returning to the War Department informed the Secretary of what he had said. But if, on this occasion, General Marshall was not able to convince his naval colleague in all matters, Admiral Stark was in agreement on the basic policy of recognizing Germany as the principal foe and Japan as one to be fully disposed of at a later time.

Opposing the dispatch of a squadron to Singapore, Admiral Stark on this occasion was reported as saying that "the vital theater was the Eastern Atlantic, and the Western Pacific a secondary one." This was the conclusion to which it was felt the Strong memorandum of 25 September should impel the President. The minutes of the Liaison Committee meeting of 5 October continue:

General Strong inquired about the estimate of the situation which had been drafted as a basis for formulating policy. He doubted if the President had ever read it, and asked that Mr. Hull make him read it. It was of the greatest importance to get co-ordinated on an estimate of what the situation is and use it as a basis for action to be taken. Mr. Welles promised to take it up and see if he can get action by the President.

Apparently he got none, for one month later, on 4 November, Admiral Stark drafted for presentation to the Secretary of the Navy a new estimate "of the world situation primarily from a naval viewpoint, presented for the purpose of arriving at a decision as to the National Objective in order to facilitate a naval preparation . . ."

This communication, a copy of which was sent to General Marshall to permit a full agreement by Army and Navy upon suggestions destined to reach the President, is of interest on more than one count. In it, one concludes from the related documents, was the suggestion from which sprang the idea of high-level Staff conversations with the British, coming about a few weeks later, the exact inception of which, oddly, does not appear in currently available records. It will be remembered that during the London meeting on arms standardization the previous August General Strong had felt that the forces' "exchange of information should be placed upon a regular basis." In mid-October, too, Lord Lothian revived the proposal for Staff conversations, this time on a "comprehensive" basis, and 2 days later in London Admiral Pound spoke to the same purpose in a conversation with Admiral Gormley.

There was no immediate result, possibly because this was at the height of the 1940 election campaign (in which both presidential candidates had asserted no Americans would go abroad to fight). On 12 November, shortly after Election Day, however, Admiral Stark's draft of 4 November was prepared as a formal memorandum to the Secretary of the Navy. It recited Navy judgments on the approaching war, so basic and so detailed that he sent copies not only to General Marshall but to Admiral Gormley in London and to Admiral J. O. Richardson, then commanding the US Fleet in the Pacific. The memorandum outlined the world situation and America's relationships to it, and then considered four possible plans: (A) limiting American activity to Hemisphere Defense; (B) directing primary attention to Japan, and secondary attention to the Atlantic; (C) directing equivalent pressure in both theaters; (D) conducting a strong offensive in the Atlantic, and a defensive in the Pacific.

Of necessity, for immediate needs, neutrality (Plan A) was advocated, but for the future it was Plan D—or "Plan Dog"—for which Admiral Stark argued. As "a preliminary to possible entry of the United States into the conflict," he recommended that "the United States Army and Navy at once undertake secret staff talks on technical matters" with the British in London, the Canadians in Washington, (creation of the Permanent Joint Board on Defense, Canada—United States was announced at the White House on 18 August 1940) and the British and Dutch in Singapore and Batavia, "to reach agreement and lay down plans for promoting unity of allied effort should the United States find it necessary to enter the war."

In the meantime, Lord Lothian had made another trip to London where Admiral Pound repeated his view that there should be conversations in Washington with the War and Navy Department Staffs. As later recounted,

The British representatives would consist of a small party which would easily pass unnoticed in the stream of missions, observers, and other officials.

Lord Lothian returned to Washington and at the end of November, the President agreed to staff talks in Washington at the earliest possible date. The sudden death of Lord Lothian caused some delay but the British representatives to go to Washington were officially appointed.

From the two countries' naval chiefs, then, rather than from the Army chiefs, came the pressure which produced the full-dress American-British Conversations ("ABC") of the following winter. Years afterwards, during the Pearl Harbor inquiry by Congressional Committee, General Marshall testified that "Admiral Stark brought up the proposition and I acquiesced. He arranged the meeting."

The 12 November communication is of further interest. It provided a new spur for reaching a decision on national policy—although not one, it developed, in exact accord with Admiral Stark's views, for his memorandum, referred by General

Marshall to WPD, encountered stout opposition. The Acting Chief, Colonel Anderson, disagreed basically with Admiral Stark's statement of national objectives, thus summarized: (1) preservation of the territorial, economic, and ideological integrity of the United States and the rest of the Western Hemisphere, (2) prevention of the disruption of the British Empire, (3) diminution of the offensive military power of Japan, with a view to retention of American economic and political interests in the Far East.

WPD doubted the United States' ability to sustain all three objectives simultaneously, and proposed, rather, a recognition of the following objectives: (1) identical with the first of Admiral Stark's proposals, (2) aid to Great Britain short of war, (3) making no military commitments in the Far East, and (4) preparing for an eventual unlimited war in the Atlantic in support of Great Britain. Colonel Anderson continued:

WPD concurs in the opinions expressed: that should Britain lose the war the military consequences to the United States would be serious; that her situation is precarious; that she needs the assistance of strong allies to win; that military success on shore is the only certain method of defeating the Axis powers. . . .

It is believed that United States intervention in support of Great Britain must initially be restricted to reinforcement of the blockade, the establishment of a strong offensive air force in England with a possibility of extending air operations into the Mediterranean area via French West or Equatorial Africa. If the United States is prepared to sustain such action over a period of years, the chances of success are considered very good. However, piecemeal action before we are fully prepared might well result in serious reverses.

Both the Stark estimate and the WPD comment were sent to the President on 13 November. On 18 November, the Joint Planning Committee, on instructions from Admiral Stark and General Marshall, applied itself to the draft of a statement of National Defense Policy which could be accepted by both Army and Navy and also could meet Presidential approval.

The Navy, feeling the need for interim planning as well as the more distant discussions, now was seeking a statement as

soon as possible, and on 22 November Admiral Stark in a memorandum to the Chief of Staff indicated in a sentence the reason for the Navy's pressure: "Over here we are much concerned with the possibility of having a war on our hands due to precipitate Japanese action." His view on that day was that, while the President had asked for a joint estimate of the situation by State, War, and Navy Departments, it would be better (presumably with a view to speed) for War and Navy to agree on an estimate which then would be submitted to the State Department. However, at the following day's meeting of the Liaison Committee he "thought the War and Navy Departments should get the views of Mr. Hull and Mr. Welles before proceeding with the detailed study." Concurring with this view, Mr. Welles expressed his own anxiety that the National Defense Advisory Commission was already discussing a possible embargo against Japan; he felt that any such discussion should be "correlated with the War and Navy Departments' estimate."

The Navy, meantime, was pushing ahead with its own interim operating plans without waiting for agreement on a policy statement, and was encountering Army opposition, expressed in a 27 November memorandum from General Gerow to the Chief of Staff. Two days later, General Marshall informed Admiral Stark that "The War Department cannot fully subscribe to the strategical concept of the war or the opinion set forth in the plan. A serious commitment in the Pacific is just what Germany would like to see us undertake . . ." He suggested

. . . readjusting war plans on the basis (1) that our national interests require that we resist proposals that do not have for their immediate goal the survival of the British Empire and the defeat of Germany; and (2) that we avoid dispersals that might lessen our power to operate effectively, decisively if possible, in the principal theater—the Atlantic. Such a basis might provide:

a. that our naval threat should be continued in the Pacific so long as the situation in the Atlantic permits.

b. that, so far as Malaysia is concerned, we should avoid dispersing our forces into that theater.

We should, however, assist the British to reinforce their naval setup in the Far East by relieving them of naval obligations in the Atlantic. This would provide a more homogeneous force for Malaysia and would, in effect, concentrate rather than disperse our naval establishment.

On that same day in an answering memorandum, Admiral Stark expressed disagreement with the Army views. More significantly, he also gave vent to his concern over the immediate future in an explosive declaration that "should we become engaged in the war described in *Rainbow No. 3*, it will not be through my doings, but because those in higher authority have decided that it is to our best national interest to accept such a war."

It was apparent to Admiral Stark that American defense plans in either ocean could not be made without a fuller knowledge of probabilities. In particular, he felt that the Joint Planning Committee needed information to assist in the preparation of *Rainbow No. 5*, which was to be a thoroughgoing plan for full Army-Navy co-ordination in the event of war. In this same memorandum of 29 November, therefore, he presented another suggestion to General Marshall. "I consider it essential," he wrote, "that we know a great deal more about British ideas than we have yet been able to glean." Apparently, he did not yet know how fruitful had been his earlier suggestion for a high-level discussion with the British, but on 2 December when General Marshall replied approvingly, a report came to General Gerow that the British would in fact shortly send to America officers for a secret staff conference.

In order to have America's military policy fully clarified in advance of that event, the Planning Committee on 21 December made its own report to the Joint Board in the form of a study plus the draft for a joint memorandum to the President from the Secretaries of State, War, and Navy. It faced "the possibility that we may at any moment become involved in war" despite a national wish for peace.

It summarized the Army-Navy argument for prior concern in the Atlantic thus: "Our interests in the Far East are very important. It would, however, be incorrect to consider that they are as important to us as is the integrity of the Western Hemisphere, or as important as preventing the defeat of the British Commonwealth. The issues in the Orient will largely be decided in Europe." After surveying alternative courses of conduct, the Committee therefore proposed recommendations from the three cabinet members as follows:

1. A rapid increase of Army and Navy strength, and abstention from steps which would provoke attack by any other power.
2. A decision not willingly to engage in any war against Japan.
3. If forced into war with Japan, restriction of Pacific operations so as to permit use of forces for a major offensive in the Atlantic. Acceptance of no important Allied decision save with clear understanding as to common objectives, as to contingents to be provided, as to operations planned, and as to command arrangement.

The Committee's view was that if the draft met the Joint Board's views and Mr. Welles', it would then receive formal concurrence of the Liaison Committee as such, and then be forwarded via the three Secretaries. (General Marshall withdrew his own suggestion that the recommendations should go, rather, direct from Joint Board to the White House.) When the matter came to Mr. Hull's attention on 3 January, the Secretary, while impressed by the whole report, felt that the recommendations were of a technical military nature outside the proper field of his Department. He listened to the argument that the purpose of the recommendations was to set up a policy approved by all three departments, rather than by the military alone. He did not commit himself, but on the original text of the report, over the initials "GCM" is a notation that, following a Stimson-Hull conference, "it was agreed that the three Secretaries should meet each Tuesday re National Defense matters."

This was at once the effective superseding of the Liaison Committee meetings, and the long-postponed creation, in far

more potent form, of a liaison of the three Departments of State, War, and Navy on defense matters. It can be conjectured that the views of the three Secretaries, and the substance at least of the military's recommendations for a clarification of policy, soon reached the White House, for on 16 January the President summoned to the White House the three Secretaries and with them the Chief of Naval Operations and the Chief of Staff. In a memorandum to General Gerow of WPD the next day, General Marshall summarized proceedings as follows:

Yesterday afternoon the President had a lengthy conference with the Secretaries of State, War, and Navy, the Chief of Naval Operations, and the Chief of Staff of the Army. He discussed the possibilities of sudden and simultaneous action on the part of Germany and Japan against the United States. He felt that there was one chance out of five of such an eventuality, and that it might culminate any day.

The President then brought up for opinion and discussion a number of phases of the matter:

What military and naval action we should take in that emergency; he mentioned the *Rainbow* plan and commented on the fact that we must be realistic in the matter and avoid a state of mind involving plans which could be carried out after the lapse of some months; we must be ready to act with what we had available.

He discussed the publicity we might give our proposed courses of action—in relation to the Philippines, fleet, continuation of supplies to Great Britain, etc.

He devoted himself principally to a discussion of our attitude in the Far East towards Japan and to the matter of curtailment of American shipments of war supplies to England. He was strongly of the opinion that in the event of hostile action towards us on the part of Germany and Japan we should be able to notify Mr. Churchill immediately that this would not curtail the supply of matériel to England. He discussed this problem on the basis of the probability that England could survive 6 months and that, thereafter, a period of at least 2 months would elapse before hostile action could be taken against us in the Western Hemisphere. In

other words, that there would be a period of 8 months in which we could gather strength.

The meeting terminated with this general directive from the President:

That we would stand on the defensive in the Pacific with the fleet based on Hawaii; that the Commander of the Asiatic Fleet would have discretionary authority as to how long he could remain based in the Philippines and as to his direction of withdrawal—to the East or to Singapore; that there would be no naval reinforcement of the Philippines; that the Navy should have under consideration the possibility of bombing attacks against Japanese cities.

That the Navy should be prepared to convoy shipping in the Atlantic to England, and to maintain a patrol off-shore from Maine to the Virginia Capes.

That the Army should not be committed to any aggressive action until it was fully prepared to undertake it; that our military course must be very conservative until our strength had developed; that it was assumed we could provide forces sufficiently trained to assist to a moderate degree in backing up friendly Latin-American governments against Nazi inspired fifth column movements.

That we should make every effort to go on the basis of continuing the supply of matériel to Great Britain, primarily in order to disappoint what he thought would be Hitler's principal objective in involving us in a war at this particular time, and also to buck up England.

It was with this statement of foreign policy in mind that the Chief of Staff and his assistants now set about Army planning on a somewhat more assured basis. On 29 January 1941, with the British Staff on hand, there were initiated the two nations' Staff Conversations, ABC-1 and ABC-2, which lasted until 27 March, riveted Army and Navy firmly to *Rainbow* No. 5, and established an understanding of what British and American elements alike would regard as their respective missions in the event of war.

We are all aware that the basic responsibility of the armed services for national security has been broadened by the leading position our country has assumed in world affairs. This role carries with it heavy responsibility for the implementation of our foreign policy throughout the world.

Secretary of the Navy Francis P. Matthews

TO COUNTERATTACK OR NOT TO COUNTERATTACK

Lieutenant Colonel Daniel Parker, Jr., *Field Artillery*
Instructor, Command and General Staff College

IF THE enemy has attained such success that local commanders are unable to eject him, the higher commander must decide whether to counterattack with reserves at his disposal to restore the battle position, to continue battle on the battle position, or to withdraw to prepared positions in rear."—Field Manual 100-5, Paragraph 643.

The fact that a commander has a choice of three courses of action under the above conditions is often overlooked. In the conduct of the defense, the commander is frequently confronted with a situation requiring a decision as to whether or not to employ his reserve in a counterattack. The counterattack is the expression of the offensive spirit in the defense and is a decisive element in the defense. Once the enemy has penetrated the battle position, it is only through the counterattack that the battle position can be restored.

On the other hand, a course of action "to continue battle on the battle position . . . or withdraw to a prepared position in rear" is seldom considered. Conditions under which a commander should adopt these latter courses of action should be well understood.

The decision "to withdraw to a pre-

pared position in rear" is a decision to enter into a retrograde movement and is undertaken only on the authority of the higher commander. The technique of retrograde movements and the conditions under which they are undertaken is beyond the scope of this discussion. The factors which will be covered are those which a commander considers prior to deciding whether "to counterattack with reserves at his disposal to restore the battle position" . . . or "to continue battle on the battle position."

The United States Army teaches aggressive warfare and emphasizes the counterattack when on the defensive. This emphasis is sound. However, it is fallacious to create the impression that all commanders, company through army, counterattack when the enemy has penetrated his sector to some predetermined depth. This impression is quite common and a possible cause lies in the way we visualize the enemy penetration which we seek to eliminate. The schematic counterattack diagram for a battalion is remarkably similar to the counterattack plans of a corps. The only difference is in the widths of the sectors and the unit designations. Figure 1 is a schematic diagram illustrating

A penetration should be counterattacked by that unit which has the means to halt the penetration and sufficient strength to assure a reasonable chance of seizing the objective and restoring the position

counterattack principles at a battalion level.

Figure 2 illustrates a properly executed counterattack plan of a division.

The development of counterattack plans for the situation as illustrated in these figures is the normal practice. Figure 3 illustrates an assumed enemy penetration which we seldom, if ever, discuss when considering possible uses of the division reserves. With the ability of modern armies to concentrate large numbers of troops within a short space of time, and the trend towards the use of the defense on a wide front, the situation in Figure 3 is far more realistic than the assumed penetrations in Figures 1 and 2. This is especially true when considering enemy penetrations into the sectors of the smaller units occupying the battle position.

Small Units

The emphasis on small unit counterattacks by local reserves has decreased in the light of World War II experience and modern developments of both equipment and doctrine. Experiences in World War II demonstrated the ineffectiveness of the majority of such counterattacks. The small unit counterattacks used by the German army possessed great nuisance value but were most ineffective in regaining lost ground. The regularity with which these counterattacks were launched indicated that they were on an almost automatic basis, and they involved any forces which might be available, regardless of size or composition. Most of these small unit automatic counterattacks were, in the long run, wasted effort.

The attitude of American units toward these counterattacks is reflected in after action reports, which usually dismissed them with such remarks as: "Numerous enemy counterattacks were repulsed in this area with the enemy suffering heavy casualties"; "Repulsed repeated counterattacks." Frequently, the after action re-

ports failed to mention the counterattacks. The counterattacks which were described in more detail still show the ineffectiveness of these small unit actions. The following example is from the 4th Armored Division after action report of September 1944:

"The division assembled in the area west of ARRACOURT and prepared to execute the corps plan for a drive northeast in the direction of SARRAGUEMINES. Weather delayed the attack for 24 hours until 19 September, when the enemy launched a series of furious armored counterattacks attempting to break through to the encircled city of NANCY. In the ensuing 4-day tank battle, the entire German armored forces in this area were battered and greatly depleted. One group of 56 Mark V tanks of the 113th Panzer Brigade was better than 75 percent destroyed, with a loss of only eight of our own tanks. These enemy armored jabs continued through the end of September and resulted in costing the enemy 281 tanks destroyed, 67 artillery pieces destroyed, 59 other armored vehicles destroyed, 514 miscellaneous vehicles destroyed, a total of 3,009 prisoners, and 3,040 enemy killed."

Another account of 16 September 1944, from the 35th Division after action report, states:

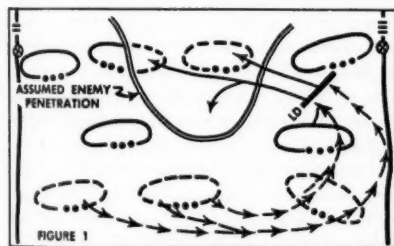
"At 1200, there was a counterattack against the 2d Battalion in the vicinity of CHARTREUSE by 10 tanks, each accompanied by from 50 to 75 foot troops. The counterattack was stopped by the combined fire of our TD's, tanks, and nine battalions of artillery. Seven enemy tanks were destroyed. Since this counterattack was seen by division field artillery and airplanes approximately one mile from our lines, the enemy never succeeded in reaching our position."

The futility of a small unit counterattack against a major enemy penetration is recognized in Field Manual 100-5, Paragraph 640:

"a. Should the enemy succeed in penetrating the position with a strong armored attack, it is essential that units on the battle position close the gap created without delay, and before succeeding hostile units can exploit the success attained. The shoulders of the salient must be held at all costs.

"b. In such situations local counterattacks may fritter away the strength of the garrison of the battle position. The defender's ability to hold the shoulders of the penetration may, as a consequence, be seriously impaired making it difficult or unsound to attempt a large-scale counterattack by general reserves."

The foregoing quotation recognizes not only the fact that a counterattack is not

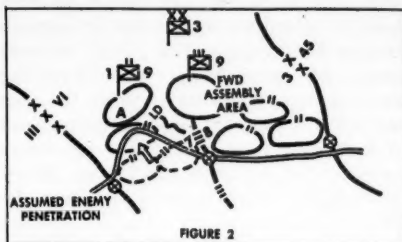


mandatory, but that, at times, it is the improper action to take. The clearest example of such an occasion is when an overwhelming attack by the enemy can be more effectively delayed by means of troops remaining in or moving to previously prepared defensive positions rather than launching a counterattack doomed to failure before it starts.

Prior to deciding the use to be made of his available reserves, a commander must consider the following factors: Terrain, time and space requirements, strength of enemy penetration, and the participation of higher units in the counterattack.

Terrain

Terrain is always an important ele-

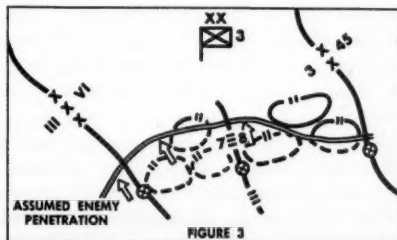


ment in any land force operation. The counterattack is no exception. Field Manual 100-5, Paragraph 638, states in part:

"They [local counterattacks] are normally not justified except to regain critical terrain lacking which the sector is untenable. Local counterattacks, therefore, can be planned in advance primarily from the viewpoint of terrain."

A mere penetration of the battle position is not sufficient cause in itself to warrant an immediate counterattack. Enemy infiltrations or the seizure of unimportant terrain by the enemy are a nuisance and must eventually be cleared up. A commander must consider carefully the commitment of his available reserves to the mission of clearing the enemy from relatively unimportant terrain. He may find himself with his reserves engaged in an operation of minor importance when it is needed elsewhere on a more vital mission.

The counterattack is not the only means available to a commander to combat a minor enemy penetration. He can



first seek to destroy the enemy or force him to withdraw by means of concentrating his available fire power. Modern means of concentrating and controlling great masses of artillery furnish the commander with a potent and effective means of destroying large numbers of the enemy concentrated within a small area. Many attacks have been stopped and even destroyed by fire alone. Another method open to a commander, if his "artillery counterattack" fails, is the containing of the enemy by means of prearranged fires and the adjusting of his lines to prevent the widening of the base of the penetration.

A careful analysis of the terrain will point out to the commander those areas which must be retained at all costs. This analysis must be made in the light of the mission of the commander and the capabilities of the enemy. A convenient question to ask about the importance of a locality is, "If the enemy succeeds in occupying this ground, is my position untenable?" This is a rather severe test and is one that will eliminate most terrain within the sector. The best example of critical terrain within the battle position which, if seized by the enemy, justifies the immediate implementation of a planned local counterattack is the terrain which provides essential observation.

Time and Space

After considering terrain, the next factor that must be considered is the time and space requirement. Field Manual 100-5, Paragraph 644, reads: "Time is required for the preparation of a major counterattack. Sufficient reserves must be assembled to carry the attack forward. Adequate fire support must be arranged. . . ."

Time and space factors for movement of friendly forces, provision of adequate fire support, and the reinforcement capability of the enemy all must be considered before arriving at a decision. It is in the

determination of the best time to launch a counterattack that the commander considers these factors. The commander must first consider the time required to implement a counterattack plan. This time must include the time to issue and disseminate the order, to assemble, to move troops cross-country on foot, to close in assembly areas, to make necessary reconnaissance, and to make the final movement to the line of departure. This time lag is considerable, particularly at division and higher levels. The estimation of the time required to implement a counterattack plan requires skill and is based on a knowledge of the experience and training of the units involved, distances to be moved, and numerous other variables.

There are various ways to reduce this time; pre-planning is the best way. A well developed counterattack plan can be implemented with few changes. Changes cause delay. Changes require detailed orders. Changes in the basic plan require changes in supporting plans, such as the fire support plan. Changes nullify prior reconnaissance, thereby necessitating additional reconnaissance. Another way to reduce the time required is to mount the infantry element of the counterattack force on tanks, thereby reducing time required for cross-country movement of units.

In determining the time to launch a counterattack, another important time element that must be taken into consideration is the estimated time required to accomplish the mission assigned the counterattacking force. At corps and division levels, in a counterattack against a major enemy penetration, the distance from the line of departure to an objective which will restore the battle position is such that a number of hours may be required to seize the objective. In order to reach the objective prior to darkness, ample time must be allowed not only for the initiation of the counterattack plan but the

execution as well. From this standpoint alone, early morning is usually the best time to counterattack a major enemy penetration, because the night can be used for planning and preparation, and the attack has all day to reach the objective.

Reinforcement Capability

The next time and space factor which must be considered is in connection with the enemy's reinforcement capability. In considering the advantages and disadvantages of an early counterattack against a counterattack which is delayed until possibly the next day, the commander must evaluate the enemy's strength both at the time of the earliest possible attack and at any later time. This factor is considered very closely with the next major factor to be discussed, that is, the strength of the enemy. A commander must ask the question, "Will time work better for the enemy or for me?" If any material delay will allow the enemy to reinforce the troops within the penetration, a commander must weigh heavily the advantages of an attack during that period of temporary confusion and disorganization inherent in the seizure of a position.

Relative Strength

The third major factor that must be considered before launching a counterattack is the relative strength between the counterattacking force and the enemy force which has penetrated the battle position. What are the chances of success in reaching the objective against known enemy strength? Will the attack which I can launch fritter away the strength of the available reserve?

United States Army doctrine states that an enemy advance must be blocked before a counterattack is launched. A misleading indication of the strength of an enemy penetration is its rate of advance against the resistance offered by the de-

fender. An advance that is stopped is not necessarily blocked. No advance moves forward at a steady rate. Even against relatively little resistance, an advance is interrupted by such things as halts for regrouping or halts to remove minor resistance.

Therefore, a commander must consider whether the momentum of a hostile attack has been spent to a degree that a counterattack has a reasonable chance of success or has halted temporarily prior to renewing its advance. The best indication that the enemy attack has reached the limit of its advance are defensive preparations for an expected counterattack and the absence of indications of enemy reserves in the vicinity of the enemy penetration. Having considered the strength of the enemy penetration, the commander then must determine whether the strength of his available reserves offers a reasonable chance of accomplishing the counterattack mission.

The Higher Commander

The final factor that must be considered prior to launching a counterattack is the attitude or concurrence of the higher commander. Generally speaking, when a unit is given a mission of defending a certain sector, it is given the means to accomplish its mission. On the other hand, the commander of that unit does not operate in a vacuum. He receives information and recommendations from his subordinate commanders and he gives information and makes recommendations to his superiors.

Field Manual 100-5, Paragraph 640d, states: "The use of local reserves of subordinate units as part of a large-scale co-ordinated attack may be part of larger-scale counterattack plans." Following this doctrine, the division commander may assign the regimental reserves a mission in some of the division counterattack plans.

The corps commander, likewise, may incorporate the division reserve in some of the corps counterattack plans.

When these conditions exist, the division commander cannot commit his reserve without at least informing the corps commander of his intentions. On the surface, this may appear to tie the hands of a commander and limit his freedom of action. Actually, quite the opposite is true. All commanders of all echelons are vitally interested in the proper functioning of all elements of the command. An aggressive leader will not wait for information to flow back to him in his headquarters. When a major threat exists within a corps sector, the corp commander will either go to the vicinity and confer with the local division commander, or avail himself of modern means of communication to maintain close liaison with him.

Before committing the division reserve to a counterattack role, a blocking role, or a combination of both, the situation as known will be discussed by the division commander with the corps commander. In a situation such as this, any decision made by the division commander is in essence a recommendation to the corps commander, and the final action taken will be the decision of the corps commander.

Having considered the above factors, the commander must decide whether to counterattack with his reserve now or at a later time, to occupy previously pre-

pared defensive positions, or to employ a combination of both.

Summary

The present doctrine on the use of the reserve in the defense is comprehensive and adequate. The emphasis on aggressive warfare has caused more thought to be placed on the counterattack than on the less aggressive blocking role. The incorrect impressions that have been created, due to the stereotyped manner in which map problems visualize enemy penetrations, can be corrected by confronting the commander with varied and more realistic situations. There are situations where a counterattack by local reserves is sound. On the other hand, there are situations when it is unsound; and these situations must be thoroughly discussed and understood by all commanders, without fear of being branded as a nonaggressive commander.

Regardless of how well we defend our sector, a superior and aggressive enemy can eventually penetrate our position. This penetration must not be successively attacked by the reserves of each successively higher headquarters. The enemy's penetration should be counterattacked by that echelon which possesses the means not only to halt the penetration, but also the means to launch a counterattack of such strength that the attack has a reasonable chance of seizing its objective, thereby restoring the battle position.

Morale makes it possible for garrisons of only moderate strength to resist for a long period when encircled, thus inflicting severe losses on the enemy and breaking his spirit. The defenders must take advantage of this and carry out successful counterattacks.

Colonel General Tchuikov (USSR)

The Army Inventory Control System

Major James G. Coats, *General Staff Corps*

THE inventory control system is the management tool used to maintain at all distribution points throughout the Army sufficient quantities of supplies to provide for troops, without overstocking in any area.*

The objective of inventory control is to effect adequate distribution of supplies to users with a minimum of supplies in the pipeline. Effective control of inventories assures that articles in needed quantities are placed where they can be applied quickly to demands and that excess stocks are quickly returned to the pipeline and moved to meet a known requirement.

The present organization of the Army supply system is a development of experience gained over a long period of time, including two major wars. It is a functional-type organization on the policy (General Staff) level, and it is organized along specialized technical lines on the operating (Technical Service) level. The

salient features of the Army supply system are outlined in Figure 1, page 47.

Supply Under G-4

The Army supply system is supervised by the Assistant Chief of Staff (AC of S), G-4 (Logistics), General Staff, United States Army, who formulates the policy needed to effect the supply of the Army in an efficient and economical manner, and co-ordinates the efforts of the various operating agencies to accomplish a harmonious supply operation.

The AC of S, G-4, is assisted in the supply program by the other General Staff members, who contribute that portion of the policy which comes within their scope of responsibilities. In this manner, the AC of S, G-4, is enabled to assure that all logistic policies, directives, and procedures support the operational mission of the Army.

Staff supervision by the AC of S, G-4 to assure that supply operations carry out this objective begins the moment the AC of S, G-3 has determined the scope of the operational plan. From this time on, the AC of S, G-4 must assure that the material means of accomplishing the task

* Although this article treats primarily with inventory or stock control, the reader will find certain "supply control" procedures discussed herein. Specifically, these procedures relate to determining local requirements, and co-ordinating the establishment of inventory levels with over-all supply requirements in a manner to attain the objective of the Army Supply System.—The Author.

The Army supply system, which is supervised by G-4 and is based on long experience, including two major wars, encompasses an inventory control system to assure adequate distribution of supplies to troops

are at hand at the right place and at the right time.

The Technical Services are the operators and actually design the supply item, procure it, and distribute it to the consumer. The supply operation performed by the several Technical Services is essentially one, performed in accordance with a single set of policies and procedures. The only differences between the systems of the separate Technical Services are differences which are required to accommodate the technical difference of specialized items and the physical set-up of the depot system.

Basic practices of supply governing the operations of the several Technical Services represent a single method of operation in the field of budgetary matters, purchasing regulations, storage and warehousing principles, stock control and supply control, requisitioning procedures, packaging principles, transportation phases, and disposal policies.

Inventory Control

In order to provide intelligent direction over the control of inventories in all areas, the Army operates a system of inventory control which places the responsibility for this operation at each level of command and management, and which makes the continuous study of inventories obligatory at all levels of command. At the base of this inventory control operation is a system of inventory reporting which maintains at each level of responsibility up-to-date information on the total quantities "authorized" and "on hand" for items of supply in using organizations, stations, and depots.

The day-to-day distribution of supplies and control of inventories is accomplished through the Technical Services' supply system. Editing of requisitions at depots and depot-liaison with installations helps to assure compliance with prescribed inventory control policies, directives, and

regulations. Technical Service stock control points control the distribution of supplies on a world-wide basis. Stock status reports from users and depots provide information of the requirements for supplies and information on the location and availability of supplies to stock control points for use in this operation.

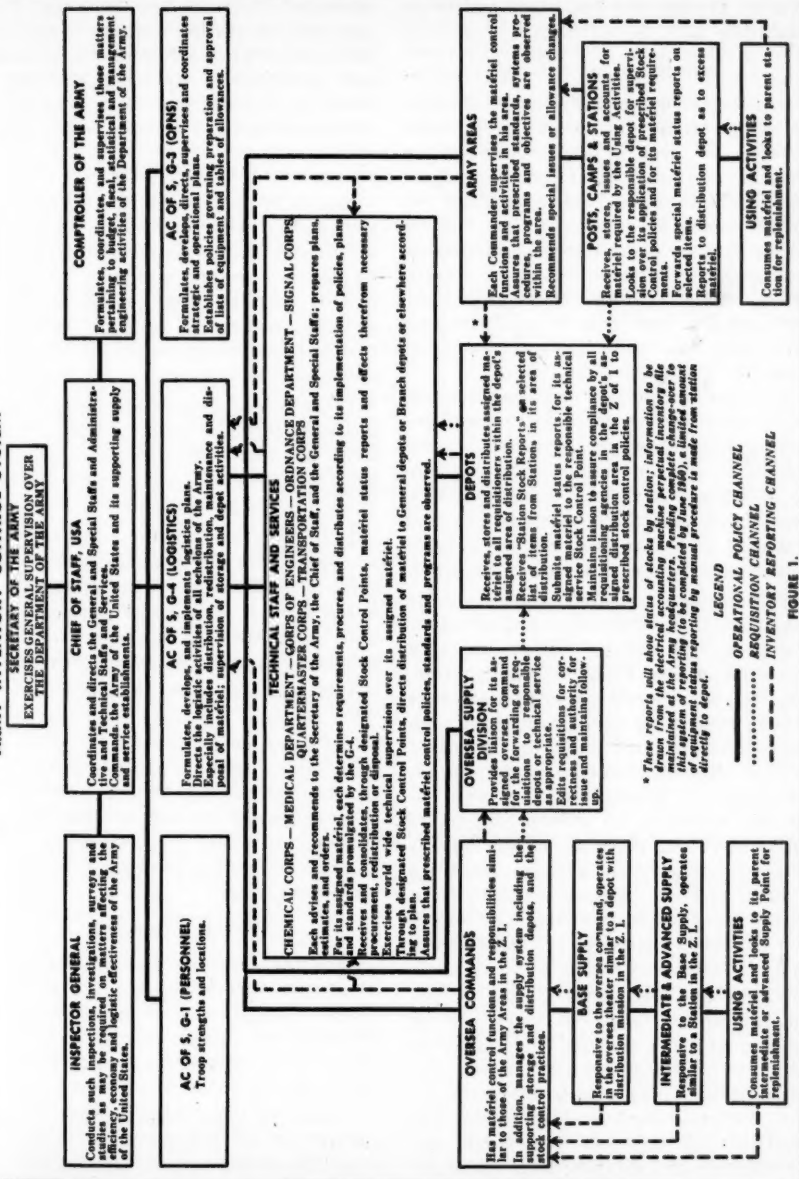
Requirements Levels

Inventory control, a distribution function, is closely related to the supply control function of the determination of requirements. It is the latter that forms the basis for establishing inventory levels. If a requirement exists for an item, levels must provide for its stockage. If no requirement exists for an item, it is disposed of as surplus. For purposes of over-all inventory control, the Army has established two requirements levels, minimum and maximum.

The minimum requirement is based upon the total peacetime mission of the Army and its civilian components. The initial allowances and replacement (or consumption) requirements for the current and two succeeding fiscal years, together with a special reserve of ammunition and certain selected items which require a long time to manufacture, comprise the minimum requirement for this peacetime force. When stocks fall below this minimum requirement, resulting shortages provide the basis for budgetary requests and procurement action.

The maximum requirement is based upon our mobilization plan. For any given item, the maximum requirement is that quantity required to be on hand in the event of war, to meet our needs until industry can satisfy them. For some items, industry can "deliver the goods" quickly, thereby reducing the amounts to be retained in our inventories to meet this maximum requirement. For other items, where a considerable amount of time is required by industry to reach full pro-

ARMY INVENTORY CONTROL SYSTEM



duction, the opposite holds true and large quantities must be retained.

Operating Control Levels

The Department of the Army establishes policy governing the quantities of supplies to be held in distribution points through the use of operating control levels. These levels are established in three separate categories, i.e., depot levels, station control levels, and levels maintained in oversea commands. Levels are authorized in terms of "days of supply" and are translated at each distribution point into "quantities of items" for operational purposes.

Inventories in supply organizations and using activities are controlled by authorizing definite quantities of supplies to be stocked or used in these activities, and by exercising the necessary inventory control supervision over these organizations and activities to assure that stocks on hand do not exceed those quantities authorized.

This inventory control supervision is performed through the review of inventory status reports and by staff visits, with corrective action taken where indicated. The Technical Services maintain constant liaison with using organizations through the medium of staff visits by inventory control representatives to posts, camps, and stations. These specialists give on-the-spot advice and interpretation of policy with reference to supply operations and procedures. Definite quantities of supplies are authorized for stockage in supply organizations through the publication of station control levels, depot levels, and oversea command levels.

Within the continental United States, station control levels as currently in effect prescribe a maximum stockage objective of 75 days expected issues, and generally a 90-day station control level. This station control level represents the requisitioning objective (in days) and the ordering and shipping time (in days)

converted into quantities of supply. These quantitative station control levels are analyzed at frequent intervals to assure that anticipated demand upon station stocks is realistic and represents an accurate forecast of estimated requirements.

Stocks in Storage

Depots in the continental United States are charged with distribution of supplies to stations in the Zone of Interior and to oversea theaters, and with storage of reserve stocks. For control purposes, definite quantities of supplies are authorized to be stored in depots for these purposes as follows:

1. Stock levels which are established to facilitate the distribution mission. These levels are set in the minimum quantities necessary to assure uninterrupted supply under current policies and conditions.

2. Mobilization reserve stocks, which are quantities of supplies required to support mobilization of the armed forces in the event of war or national emergency until such time as adequate additional quantities of such equipment or materials can be procured from industrial production.

3. Production reserve stocks, which are quantities of certain items of supply authorized for stockage because of difficulty in procurement incident to seasonal production, and where procurement in excess of needs is essential to avoid uneconomical production rates.

Oversea Commands

Levels of supply authorized for stockage in oversea commands are expressed in "days of supply" and are published by the AC of S, G-4 (Logistics) as a basis for requisitioning by oversea commands. These levels are expressed as follows:

1. An operating level, which is that quantity of an item required to sustain operations in the interval between requisi-

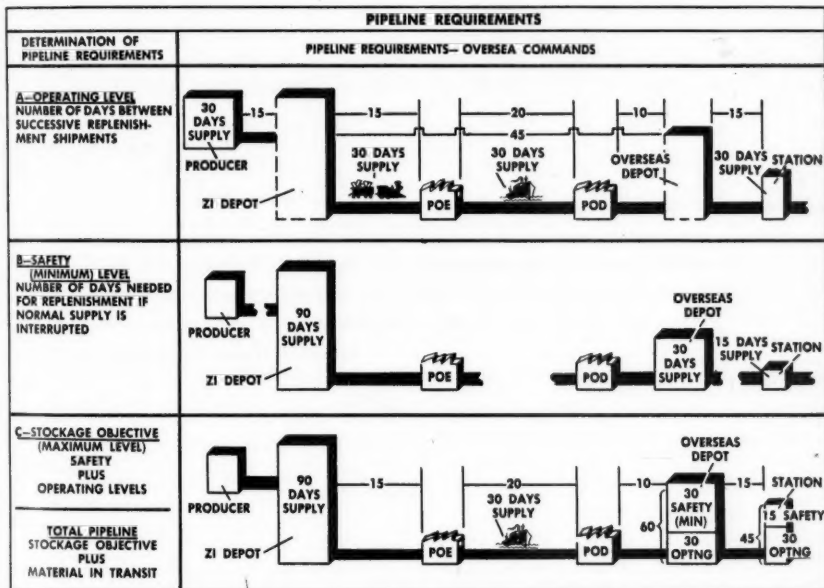
tions or the arrival of successive shipments. This quantity represents the estimated consumption during the replenishment period expressed in terms of days of supply. The replenishment period varies from monthly to annual basis depending on the type of item involved. Determination of the number of days for the replenishment period or for the operating level is based on availability of shipping, economy in packing and handling opera-

it is also assumed that emergency replenishment of stock should be effected within the number of days authorized as the safety level.

3. Figure 2 illustrates the use of overseas command levels of supply.

Inventories

Knowledge of availability of supplies is essential in the operation of inventory control. The Army has in operation



tions, and various administrative factors.

2. A safety level, which is that quantity of the item of supply required (in addition to the operating level) to permit continued operations in the event of minor interruptions in normal replenishment. Generally, safety levels are based on the assumption that interruptions will be temporary and that the next regular replenishment shipment will arrive on time and in satisfactory condition. However,

throughout the continental United States an inventory reporting system which utilizes electrical accounting machines and methods applicable to this equipment. This system provides at each management level accurate up-to-date information on the inventory position (quantities authorized and on hand) of all items of supply controlled at that level.

A perpetual inventory record is maintained at each Army headquarters for all

major items of supply in the hands of troops and in stations throughout the area. This record is maintained on electrical accounting machine punch cards which are posted monthly from change reports submitted by using activities. The punched cards are coded to permit preparation of machine summaries to show the readiness status (in terms of equipment) of organizations and to show the inventory status (quantities authorized and on hand) of any major or principal item of equipment in use throughout the area or in any post or station of the area. Consolidated listings prepared from this file are transmitted to the Chiefs of

Technical Services for use in supply control studies and inventory control operations.

Depot stock status reports are submitted periodically by each depot to central stock control points operated by the Chiefs of Technical Services to facilitate inventory control of stocks in depots and to permit consolidation to show Army-wide assets for use to keep procurement and stock replenishment in balance with supply demand.

The reporting system discussed above is now being extended to all oversea commands. It is estimated that this extension will be completed late in 1950.

Sept 1950

To achieve security, we must unite the sinews of industry and defense, for when our strength and our resources are a synchronized effort, we need fear no external enemy, nor internal subversion.

General Omar N. Bradley

We military men must always keep in mind the fact that the real strength of this country is its economic well-being: its great industrial plants, its farms, and its labor. If, year after year, we were to demand funds to guarantee the complete defense of this country, we could eventually wreck our national economy.

General J. Lawton Collins

AMMUNITION SUPPLY IN THE COMBAT ZONE

Lieutenant Colonel John W. Schroder, *Ordnance Department*,
Instructor, Command and General Staff College

ONE of the most important factors in any combat operation is the adequate supply of the right type of ammunition. Because of the necessity of having the exact item available and the difficulty of handling the large tonnages involved, ammunition supply must be closely controlled.

In an effort to ensure an efficient system, the Department of the Army in Circular 31, dated 9 February 1948, established a standard system for supply of ammunition in an overseas theater. The details of this system are now covered in Special Regulations No. 700-310-1 dated 16 January 1950. The system established by the circular has as its purpose the simplification of ammunition supply at all levels by placing it on a realistic basis, standardizing the terminology, and reducing the number of administrative reports required.

Due to existing peacetime conditions, few people have had a chance to operate under the new system, and there has been considerable confusion and lack of understanding concerning it. In order to properly understand the changes made and the reason for them, it is well to consider the historical background of the system.

During World War II, the term "unit of fire" was used to designate ammunition credits or stockages and to indicate to the commander the status of his ammunition supply. For example, it might be directed that an ammunition supply point (ASP) would stock 3 units of fire and that a specific division will have a credit of 2 units of fire at that ASP for a specified period of time. The unit of fire was supposed to represent the ammunition requirements for a force for a certain number of days depending upon the nature of the combat, and to give the commander and general staff officer a convenient unit of measure. Of course, the ordnance officer and the using units had to convert this information to a number of rounds of each type of ammunition in order to use it.

Wartime experience showed that the very nature of the unit of fire, and the way in which the term was used, resulted in an unsatisfactory situation. In the first place, if you tell a commander that he has available 3 units of fire, he does not know how many days of fighting it will support without interpretation of the daily requirements in terms of units of fire. Furthermore, there is no indication

The new system for the supply of ammunition in an overseas theater is based on combat experience, simplifies previous methods, and ensures adequate ammunition support with a minimum of administrative detail

of the shortages which may exist in specific types of ammunition. Since the important thing to any combat commander is "how long can we fight with the supplies available," this situation is not satisfactory.

To further complicate the situation, the ratio of the various types of ammunition fired during different types of combat is not constant. For example, the ratio of artillery ammunition to small arms ammunition expended in an attack on a fortified position will be much larger than in a pursuit. The use of the unit of fire as a basis for initial supply and resupply of a force results in unbalanced stocks.

To illustrate, the use of the unit of fire to indicate the amount of ammunition to be shipped to Sicily resulted in a surplus of 8,000 tons of small arms ammunition on the island, which was many times the consumption of this type of ammunition in the campaign. The same thing is true when the unit of fire is used as the basis for stockage of ammunition supply points. Unneeded items are stocked and must be moved each time the supply point is moved. At the same time, there may be a shortage of other items. This situation does not result in good supply or economical use of transportation.

To overcome the disadvantages of the use of the old system, it was necessary to either revise the concept and use of the term "unit of fire" by making it a flexible unit, or go to a new system dealing in rounds of ammunition. While the revision of the concept of the unit of fire might have certain advantages, it has the disadvantage of continuing the use of a term which has been misused and misunderstood by large numbers of persons. All too often, such a situation results in a continuation of the earlier abuses. By a process of evolution, the system now standardized by Circular 31 was developed within First Army in Europe during the War. Several other commands developed

or adopted a similar system. Thus, the new system is not just someone's dream but is the result of wartime experience and development.

Terminology

Circular 31 abolished the term "units of fire" and eliminated the credit system for control of ammunition issues in the combat zone. Before attempting to understand the operation of the new system, it may be desirable to consider the terminology used. The principal terms used are:

1. *Basic Load.*—The basic load is the amount of ammunition, expressed in rounds by type, or appropriate unit of measure for bulk allotment items such as demolition explosives, to be carried by a unit in its organic transportation. It is a fixed amount of ammunition established by the Department of the Army concurrently with the publication of the unit's table of organization and equipment.

2. *Required Supply Rate.*—The required supply rate is the amount of ammunition for each type weapon, expressed in rounds per weapon per day or appropriate bulk measure, required to sustain operations of any designated force without restriction. This is not a fixed rate and is changed to conform to the progress of operations. It is computed on and applied to tactical weapons only (weapons in divisions and crew-served weapons of non-divisional tactical units; weapons in combat service support and service support units are excluded).

3. *Available Supply Rate.*—The available supply rate is the rate of consumption in rounds per weapon per day or appropriate bulk measure that can be sustained with available supplies as announced by each commander, and applicable within his command. This rate is flexible and conforms to changing operational plans and changing tactical conditions.

4. *Ammunition Day of Supply.*—The



Out of the combat experience of World War II has come a new system of ammunition supply which clarifies terminology and simplifies administration. Above, an ammunition dump on Saipan, June 1944. Below, men of the 506th Ordnance unloading a truck which has brought ammunition from a beach in France, August 1944.—US Army photos.



ammunition day of supply consists of the estimated quantity of ammunition required per day to sustain operations in an active theater. It is based on all weapons authorized to be in the hands of troops in the theater, including weapons in inactive units. Because of this basis, the ammunition day of supply figure is not appropriate for use in determining requirements for a tactical unit in the combat zone.

Establishment of Rates

The required supply rate is determined by each commander from the division level through the army group, taking into consideration the nature of the combat anticipated. It is the commander's estimate of the ammunition required daily by his command for a particular period of time, normally 7 to 10 days. This requirement is furnished to the next higher commander, who uses it in determining his required supply rate. The army group, or army if no army group exists, determines the amount of ammunition which will be available for the ensuing period, the ammunition to be available being that within the army depots and supply points, plus that which will be received from the communications zone.

If a comparison of the ammunition to become available and the total required supply rates shows that there will be a shortage of any given type of ammunition, the army group establishes an available supply rate for that item for each major subordinate command. The available supply rates for subordinate commands need not be the same but will take into consideration the nature of combat each command may encounter. For example, a corps commander may establish a higher available supply rate for each of two divisions which are to make the main effort in an attack than for a third division which is to make the secondary effort. For those items for which there is no

adequate supply of ammunition, the required supply rate may be considered the available supply rate. Thus, the available supply rate is always equal to or less than the required supply rate and never more. Each headquarters below the army group determines the available supply rates for its subordinate commands when it receives its available supply rates from the next higher headquarters. Thus, the required supply rates are determined progressively upward from the using unit and the available supply rate is established progressively downward to the using unit.

In an actual operation, you would know from your expenditure experience what required supply rate might be anticipated under various combat conditions. For training purposes, typical required supply rates are shown in Field Manual 101-10 for different types of combat and for a protracted period. The values for a protracted period cover an average of various types of combat over an extended period.

Reports

The system provided reduces the number of reports required from the using unit. A report of ammunition on hand in units is no longer required since the basic load is established and must be continually replaced as expended. The unit needs to report only when it has ammunition on hand which is in excess of its basic load. In this case, the unit will make daily reports of the excess until it is consumed or returned to an ASP. Combat units are not required to submit expenditure reports because the ammunition is considered as expended when issued by the ASP. The division ammunition office (DAO) and the ASP can furnish the required expenditure data from their records. The tactical commander knows that his units have on hand their basic load unless the unit commanders have reported an inability to obtain replenishment supplies from the designated supply

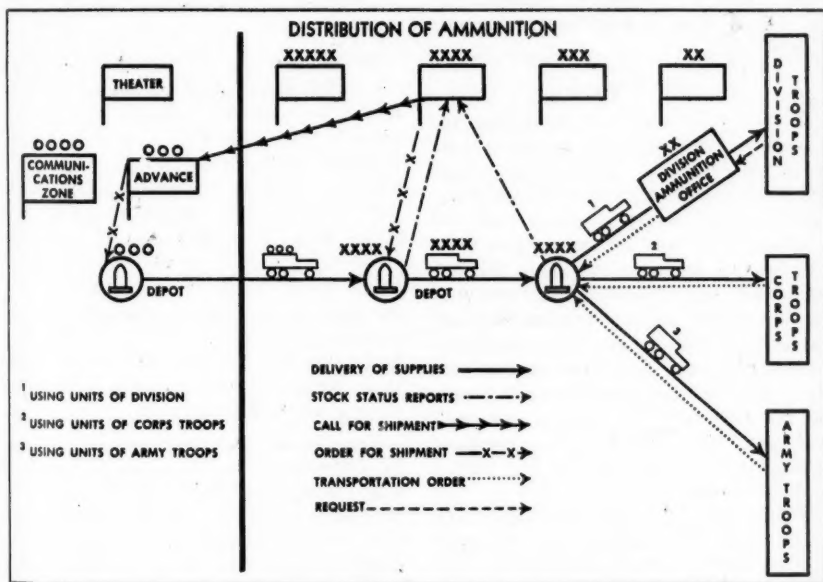
point. The tactical commander may call for expenditure reports, if he wishes, but they should not be necessary.

Supply in Depth

The test of any system for the supply of ammunition is its ability to insure an adequate supply of ammunition to the combat troops at all times. To accomplish this, the supply must be echeloned in depth. The system established by Circular 31 does this by providing for a basic load in the hands of the unit sufficient to

normal combat position relative to the location of the nearest ASP. Obviously, a mortar company which may be in a forward position without good transportation has a different problem than an artillery battery which may be located on a good road.

The next step is to provide an ASP which can be reached by all the units it serves with a turn around time not to exceed 8 hours. These ASP's will normally stock 2 or 3 days of supply at the required or available supply rates. An ASP should



take care of an average of 2 days of hard fighting and providing a means of continual replacement of this ammunition.

The first step in insuring proper supply is the proper determination of the basic load. The amount of ammunition in a unit's basic load and length of time it will last in combat is determined by a number of factors among which are: the unit's ability to carry the ammunition, its facilities for resupplying itself, and its

not serve elements of more than one corps. Based upon issues reported by the ammunition supply point, the army ordnance officer orders shipments made from the army ammunition depot to maintain the stock level in the ASP. Under some circumstances, these shipments may be made direct from the communications zone depot.

The final link in the ammunition supply chain in the combat zone is the army am-

munition depot. The army ammunition depot stocks the balance of the ammunition authorized for stockage in the combat zone and must be able to resupply ASP's in about 12 hours. The stockages of the army depots will normally consist of about 15 days of supply at the required or available rates. These depots are resupplied by calling shipments forward from communications zone depots on the basis of credits established for each army. In the case of chemical ammunition, the army chemical officer performs these functions. Thus, we see that an adequate initial supply and a satisfactory resupply is provided.

Unit Resupply

It should be borne in mind that the changes in the system are primarily ones of terminology and bookkeeping rather than changes in the physical handling. Each unit will carry its basic load and maintain it by drawing ammunition from a designated ammunition supply point to replace expenditures. The maintenance of the basic load is the responsibility of the unit commander and is accomplished by sending trucks to the ammunition supply point with a transportation order bearing the statement *"Required to replenish basic load (or required for immediate consumption). Expenditures are within authorized available supply rate."*

Within a division, the trucks returning to the ammunition supply point will stop at the division ammunition office. The division ammunition officer checks the requests for the ammunition against avail-

able supply rates and issues and gives the driver information regarding movement of the ammunition supply point or other matters of interest.

There is no specific office designated in the corps to approve the transportation orders for the corps units. The corps commander may designate the ordnance officer or the artillery commander as the approving agency. If the artillery commander is made responsible, he may make the group S-4 the authenticating officer. The flow of ammunition and ammunition requisitions is shown in the accompanying chart.

In exceptional circumstances, such as the initial phase of an amphibious operation, it may become necessary for certain units to have ammunition in their hands in excess of their basic loads. When this situation exists, the responsible commander can direct such action. Since the excess ammunition is a part of the army level of supply, it is necessary for the unit commander to report the quantity on hand daily. Upon expiration of the authorization for the excess stocks, any excess left will be eliminated by expenditure. Reports on the excess will be made as long as the excess exists.

Thus, we see that the system established by Circular 31 is the result of development under combat conditions and is a simplification of the previous supply system. The advantages of the new system, stated briefly, are that it insures adequate ammunition support with a minimum of administrative detail.

Class V supplies have a direct influence on tactical operations, and items in short supply are controlled in tactical command channels throughout the system. The ammunition supply system is based on the possession in the hands of using units of a fixed and determined basic load of ammunition which will be replenished as used.

Preparation and Conduct of Field Exercises

Lieutenant Colonel Larry J. O'Neil, *Infantry*

Major E. E. Steck, *Infantry*

Instructors, Command and General Staff College

This is the first of a series of two articles on the preparation and conduct of field exercises. The second of the series, covering the conduct of field exercises, will appear in the October issue.—The Editor.

Part I—Preparation

THE system of instruction known as the applicatory method, in which the student learns by doing, lends itself particularly well to the development of tactical proficiency.

Applicatory tactical exercises may be conducted in a variety of forms, ranging from the simple sand table exercise to complex joint maneuvers. Of this wide variety, the field exercise is probably the tactical exercise most widely used in training when troops are actually present on the ground. Field exercises are also extensively used to test the proficiency of units of battalion size and smaller.

The field exercise is defined as an exercise conducted in the field under simulated war conditions, in which troops and armament of one side are actually present, in whole or in part, while those of the other side are imaginary or outlined. The term "outlined" as used in this definition means

that the enemy may be represented by a token force if desired; thus a platoon might "outline" a battalion or larger enemy force.

The field exercise differs from a field maneuver in that the latter is an exercise in which the military operation is conducted on the ground under simulated war conditions, the troops and armament of both sides being actually present, either wholly or in part.

Field exercises offer several advantages over field maneuvers, particularly in the earlier phases of training. The principal advantages are that field exercises are less difficult to prepare, can be conducted more quickly, are more flexible, and require less terrain.

There are no limits to the size that a field exercise may assume, except those imposed by the availability of terrain, personnel, and facilities, plus the imagination and ingenuity of those charged with its preparation. This article, however, is intended to cover the more important features of the field exercise as they apply to units engaged in the regular training cycle.

Field exercises form an important link in the progressive scheme of military

The field exercise is probably the tactical exercise most widely used in training when troops are actually present on the ground. In preparing the exercise, detailed planning is the key to success

training and should be introduced early in the training program. They should be continued throughout the training program. They are an excellent medium for training commanders in troop leading and at the same time for training the troops in the development of the teamwork which is essential to successful combat. Training concepts in past years have sometimes confused the proper progression of military training and have involved a rigid phasing of training which defeated the end in view—flexibility.

The accompanying table compares military training progression with the familiar development of a football team:

	<i>Military Training</i>	<i>Football Training</i>
Fundamentals:	Disciplinary drills: marching, weapons instruction, and the like.	Blocking, tackling; handling ball.
Advanced individual:	Manning fire support weapons; communications.	Punting; place kicking; passing, running interference.
Theory of play:	Map exercises; sand table.	Blackboard talks.
Field practice I:	Combat drills; field exercises, CPX's.	Signal practice.
Field practice II:	Maneuvers.	Scrimmage.
Final Test:	Combat.	Scheduled game.

This table is intended to emphasize the place of the field exercise in a flexible program. Football signal practice is not held off until fundamentals have been mastered but is scheduled almost at the start of the training period. Fundamentals continue while the individual and the team progress concurrently. Similarly, field exercises for small units, particularly the combat drill type, should be scheduled early in the training cycle. Headquarters of larger units should conduct the mobile CPX form of field exercise at the same

time. Thus, control elements and troops receive concurrent training which facilitates the early use of larger field exercises.

Preparing a field exercise

The commander ordering the preparation of a field exercise issues a directive to the officer charged with its preparation. The directive may be formal or informal, oral or written. It should include, as a minimum, the purpose of the exercise, the terrain available, the troops to participate, the date and duration of the exercise, the funds and material available if expenditures will be made or special construction is necessary, the umpire per-

sonnel and communications available, and the Aggressor forces available if Aggressor is to be used.

In the preparation and conduct of very large field exercises, an exercise director is designated; the director and his staff are given responsibility for all phases of the exercise. In the preparation and conduct of the field exercise as employed in the normal training cycle, primary responsibility for preparation is usually given to G-3, who is assisted by the other staff members.

The "G" designation does not imply that the preparation and conduct of field exercises is limited to the staffs of divisions and higher units. For convenience, the individual or agency having primary responsibility for personnel, intelligence, training, or supply will be referred to as "G-1," "G-2," "G-3," or "G-4," respectively, whether the unit to which reference is made is a platoon or a division.

A chief umpire is usually appointed to conduct the exercise under the supervi-

tions concerned and the chief umpire, will take the following steps, more or less in sequence, depending upon the directive:

1. Study the directive and determine the general nature of the exercise.
2. Review pertinent references.
3. Make a map reconnaissance of available areas, followed by a ground reconnaissance of those areas meeting the minimum requirements.
4. Make a tentative selection of the area for the exercise.

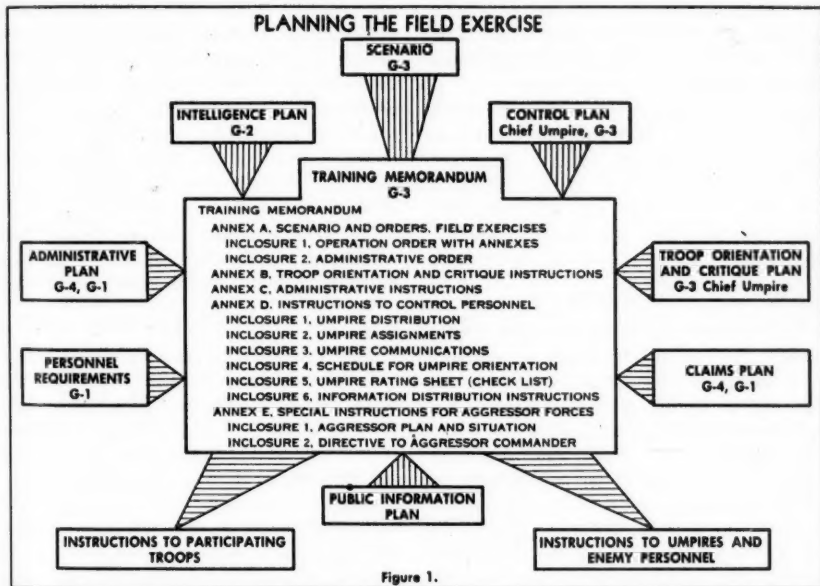


Figure 1.

sion of G-3. At times, the G-3 may act as the chief umpire, or again, the officer designated as chief umpire may be given the responsibility for preparing, as well as conducting, the exercise. The procedure used depends upon the purpose for which the exercise is designed and the wishes of the commander.

Upon receipt of a directive ordering the preparation of a field exercise, G-3, in co-ordination with the other staff sec-

5. Prepare a draft of the scenario.

6. Conduct a ground reconnaissance of the area selected to determine whether the scenario fits the ground.

7. Prepare an operation order, less paragraphs 1 a, (prepared by G-2) and 4 (prepared by G-4) based on the scenario. The operation order becomes an enclosure to the scenario, and is the means by which the exercise is started.

8. Prepare and issue a training memorandum. (See Figure 1.)

Once the scenario is completed, concurred in by other staff sections, and approved by the commander, the other staff sections and the chief umpire can begin work on their portions of the supporting plans and instructions. G-1 will consult with G-3 and the chief umpire for umpire requirements, and with G-2 and G-4 for personnel requirements that they might have. He then prepares the personnel paragraph of the administrative order, and provides G-3 with the name, rank, and organization of all personnel who will participate in the exercise in an individual capacity. G-2 will prepare the intelligence plan, G-3 and the chief umpire will prepare the control plan and the troop orientation and critique plan, and G-4 will prepare the administrative plan. These plans will be discussed in more detail in the following paragraphs.

The Scenario

The scenario is written as an annex to the training memorandum, although it is the basis for all other plans. The scenario consists of the general situation, the initial and subsequent situations and their requirements, and a time schedule. It may be prepared in narrative form, in illustrative form on a map or overlay, or in a combination of the two. It may be either general or detailed in nature, depending upon the purpose of the exercise.

Scenarios of a general nature are used in exercises designed to develop co-ordination in the command, or when the exercise is to be the medium for a training test. The detailed type of scenario is used when the exercise is designed to correct specific deficiencies or to emphasize specific points in training. An exercise based upon a detailed scenario requires close control, and does not permit the freedom of play on the part of the participants that is inherent in one based

on a scenario of a general nature.

The situations of a scenario may be varied almost indefinitely by the introduction of a number of factors in different combinations. The most common of these factors are relative strength, the composition and disposition of opposing forces, terrain, distance, mission, reinforcements, time of day, weather conditions, and administration. A change in any of these can completely change the whole problem.

The scenario should be designed to apply specific principles as taught in a progressive training program, and it should depict realistic situations. The effectiveness of field exercises in training is increased in direct proportion to the ingenuity employed to create, as nearly as possible, the true conditions of battle. In war, lack of time, strained nerves, meager or vague information, delayed orders, physical discomfort and fatigue, noise, and confusion are common. Officers and men must be trained to expect such conditions.

The Intelligence Plan

The intelligence plan is prepared by G-2 in co-ordination with G-3 and the chief umpire. This plan considers those factors which will add realism to the exercise for the combat troops. It provides for the realistic play of combat intelligence, and if desired, the conduct of enemy representation through the training medium of the Aggressor army.

In preparing the intelligence plan, G-2 studies the directive, the scenario, and the operation order, and prepares a series of enemy situations that will force the exercise along the lines intended. He reconnoiters the terrain to ensure the feasibility of the enemy situations, then consults with the chief umpire and the commander of the unit which will play Aggressor (if such play is planned) to determine the information concerning the enemy situations which is to be released to troops. G-2 then prepares a work sheet

showing the information to be released, the manner of releasing it, and a schedule for releasing it. He then prepares a draft of paragraph 1 a of the operations order (or of the intelligence annex) and consults with G-3 to ensure co-ordination with the operation order, the control plan, and the troop orientation and critique plan.

The Control Plan

The control plan provides for the organization of the umpire system and for such instructions as are pertinent to the control and supervision of the exercise. The success of the exercise is entirely dependent upon this plan and its proper implementation.

The control plan is usually prepared by the chief umpire or head of the control group in close consultation with G-3. In preparing the plan, the chief umpire (or G-3), after studying the scenario and operation order, designs the umpire system to include the number of umpires required (consults with G-1 regarding personnel availability), the assignment of umpires, the channels of communication, the channels of command, the type and frequency of reports to be rendered, and the scoring procedures.

The control plan must also consider the means by which the umpires will become familiar with the situations which might arise during the play of the exercise. Rehearsals, war games, or mobile CPX's are devices which may be used to accomplish this end.

The officer preparing the control plan then drafts instructions to umpires, co-ordinates the draft with the intelligence plan, and prepares the instructions to umpires in final form.

Since control is the dominant factor in the successful conduct of a field exercise, the number of qualified umpires available may dictate the size of the unit which may participate in the exercise at

one time. When qualified personnel are not available to act as umpires in sufficient numbers to guarantee adequate control for a given unit, it is better to plan on conducting a series of smaller exercises involving different elements of the unit.

The Administrative Plan

The administrative plan is prepared by G-4 after consultation with G-1, and with the special staff and technical service officers concerned. This plan considers those factors which will add to the realistic play of logistics. It covers the logistical aspects of the exercise for both the administrative and technical requirements. This plan provides for service participation in the exercise when it is desired to give a proper picture of the part the services play in the support of such an operation.

After studying the scenario and the operation order, G-4 consults with appropriate special staff and technical service officers regarding a plan for playing the logistic support to include establishment of actual or skeleton service installations and resupply. He determines availability of essential supplies for the exercise, works out a plan for medical evacuation, for traffic circulation, and for other pertinent sections of the administrative order. G-4 then drafts the administrative order (consulting G-1 for details concerning personnel), reconnoiters the terrain to ensure the feasibility of the administrative plan, and consults with G-3 to ensure co-ordination with the operation order, the control plan, and the orientation and critique plan.

Orientation and Critique Plan

The troop orientation and critique plan is prepared by G-3 or the chief umpire in consultation with G-3. In preparing the plan, G-3 (or chief umpire) determines who is to attend the initial orientation, selects a time and date, selects a site for

the orientation and critique and arranges for its use, has prepared such maps and charts as may be necessary, and prepares and rehearses the orientation. Following this, he prepares instructions for the orientation of junior officers and troops by their commanders. He then prepares instructions for a critique to include time, place, date, schedule of speakers, and scope.

Other Plans

Other plans, such as the claims plan and the public information plan, may be prepared by the appropriate agencies when warranted by the size, scope, or duration of the exercise.

Training Memorandum

The preparation of the training memorandum is the final step taken by G-3 in the preparation of a field exercise. The training memorandum incorporates the provisions of all of the plans prepared by the various staff sections. It is the medium employed for issuing the necessary orders, instructions, or directives to all personnel and units participating in or contributing to the exercise.

The training memorandum is prepared as a basic memorandum with annexes. The basic memorandum answers the *who*, *what*, *when*, *where*, and *why*. It is paraphrased to show the purpose of the exercise, references pertaining to the tactical

doctrine involved in the exercise, and a schedule. The schedule includes a designation of the units participating in the exercise, and the time and place the exercise is to be held.

The annexes to the basic memorandum include information requiring special distribution, or instructions on subjects which are detailed and lengthy.

An outline of the training memorandum, the sources from which it is derived, and the uses to which it is put are shown in Figure 1. By preparing the training memorandum in part (i.e., a basic memorandum for general distribution, and annexes for special distribution), the problem of placing all of the essential information into the hands of the personnel requiring it, without disclosing the scheme of play to participating troops, is simplified.

Summary

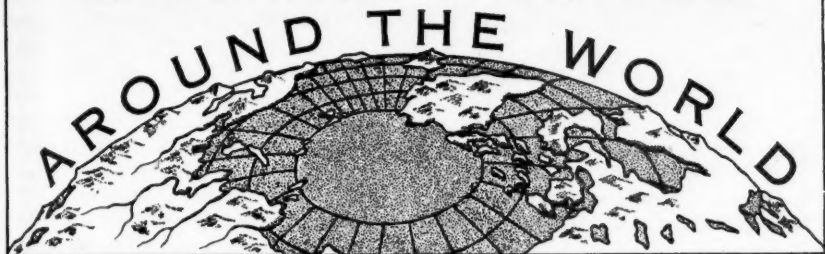
Detailed planning is the key to preparing a successful field exercise.

The field exercise selected for a particular unit must accomplish a definite training objective. The tactical situation must be drawn to illustrate the principles it is desired to cover and to fit the exercise to the size of the force involved. The size of the force involved will be influenced to a great degree by the availability of qualified umpire personnel, terrain, and communications.

Great Britain has learned from bitter experience that when war comes it is then too late to commence the training and equipment of land forces. Such forces as the government decides are necessary must be ready, organized, and trained to take the field. The great speed with which the opening phases of a war can be developed by an aggressor makes a high degree of readiness on our part an essential condition.

Major General G. W. E. J. Erskine, Great Britain

MILITARY NOTES



UNITED STATES

Navy Video

The US Navy "twisted the dials" recently to tune the public in on a television program it is sponsoring underwater and several miles in the air.

The occasion was a film demonstration of the results of a 4-year research project in developing equipment and technicians in specialized video uses. One of the demonstrations was a motion picture of a television broadcast showing a deep-sea diver at work.

Navy electronic experts pointed out that since television was first used by the Navy in the Pacific War to guide pilotless planes loaded with explosives to Japanese targets, the military uses of television have been increasing rapidly.

Television in the Navy has reached into aerial reconnaissance, engineering research, and training.

Showing one of the dramatic applications of television, films were run off a video broadcast of cavitation tests on ship propellers. Cavitation is the vacuum formed around a spinning propeller when the blades are run beyond certain speeds. It causes a loss in efficiency. Films made with a stroboscopic lighting made the revolving propeller appear to stand still

while the shock waves caused by the motion and the water could be seen clearly.

It is in the filming of broadcasts that the Navy, working for the three services, has devoted a great part of its effort. Research specialists pointed out that as television began to be used for observing operations and experiments from a remote spot the value of the technique would be enhanced if a record could be kept.

Shown at this demonstration was the first sound movie ever made of a color broadcast as well as the first underwater television movie.

Experts explained that divers working, for instance, at 100-foot depths could remain on the job for relatively short periods and must be relieved quickly. Relief divers waiting on deck to be lowered to the salvage job could, by observing the work of a submerged diver as a television camera flashed his activities upwards, be able to take over where the previous diver left off with no time wasted in orienting himself to the situation.

Moreover, a camera recording the operations would preserve the operation so that its problems and lessons could be studied.—*The New York Times*.

Mud Paving

A chemical process to convert a mass of mud into a stable surface capable of supporting aircraft and heavy vehicles was announced recently at Massachusetts Institute of Technology.

The report came from a committee of civil and chemical engineers who studied the new process for the stabilization of soils. The study was sponsored by the Engineer Research and Development Laboratories of Fort Belvoir, Virginia.

The process provides, in less than 5 hours, a stable, tough, and somewhat rubbery surface on a beach, a "soupy" road, or a muddy pasture. It is especially valuable in providing a tough surface for new airstrips, for landing operations on a beach, or for military roads.

The process is based on calcium acrylate, which is absorbed by the soil particles. Sodium thiosulfate and ammonium persulfate are then added, causing the calcium acrylate molecules to "lock together."—*The New York Times*.

Titanium for Tanks

Researchers are finding that, under some conditions, titanium is more resistant to penetration than steel of equal thickness. Scale tests show that half-inch titanium plate can do as good a job as the best steel-alloy plate—maybe even better. And titanium is only 60 percent as heavy as steel. This is important, since considerable emphasis is being placed on the development of fast, strong, light tanks that can be carried in airplanes. Since the use of titanium instead of steel would effect a saving of 4 pounds in every 10, a tank made of the new material could be large and still light enough to be air-lifted. The cost of \$7.50 a pound of ingot titanium is still a prohibiting factor. But industry believes that new processes now being worked out will reduce the price materially.—*Ordnance*.

Atom Submarine

America's defense chiefs recently were reported pushing plans for development of the world's first atom-powered submarine—a project that might revolutionize naval warfare.

Theoretically, such an undersea craft would have an almost unlimited range.

Research on atom engines for airplanes was also reported progressing.

Secrecy surrounded both projects, but a well-posted informant said discussions were under way between the Navy and the Electric Boat Corporation of Groton, Connecticut, builder of many of the Navy's submarines.

The Atomic Energy Commission disclosed that three Electric Boat technicians had been sent to attend "nuclear reactor" courses at the Oak Ridge, Tennessee, atomic works.

An informant said the Navy-Electric Boat discussions were so far along that in all likelihood Congress would be asked to tack on new funds for the work in making up the Navy budget for the fiscal year beginning 1 July 1950.—*The New York Times*.

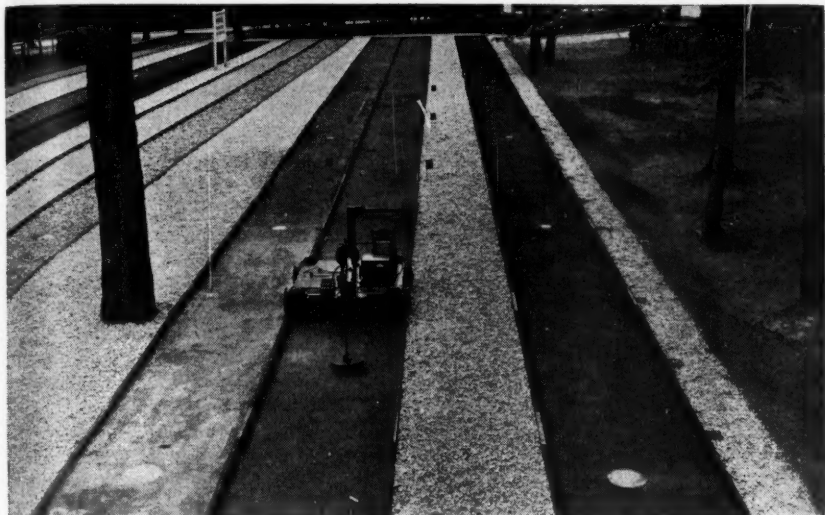
Lightweight Alloy

A lightweight alloy, strong as high-strength steel and only half as heavy, has been developed by the US Navy for use in jet planes.

Composed basically of 5 percent chromium, 3 percent aluminum, and the remainder titanium, the new alloy possesses the advantageous physical properties of several metals now used in aircraft.

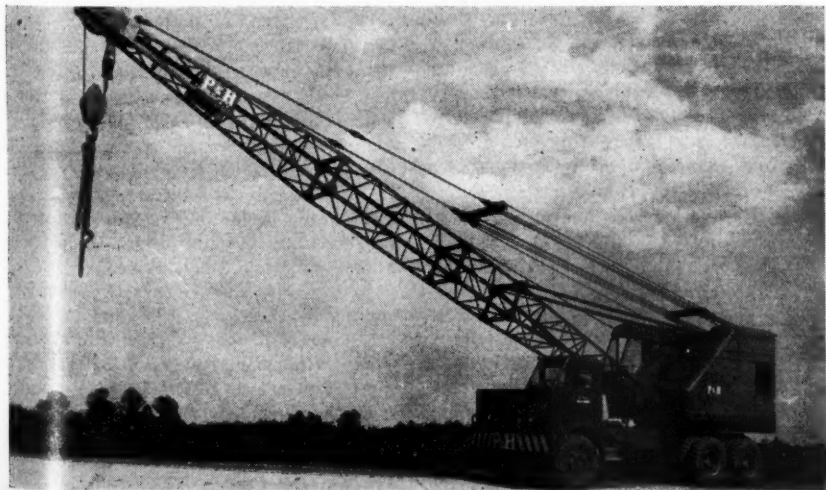
In addition to its high strength and light weight, the alloy is highly resistant to corrosion; unlike other metals now in use, it retains its basic properties at high temperatures.

Developed under a Navy Bureau of Aeronautics program, the new alloy is being used in parts of new jet planes.—*Army Navy Air Force Journal*.

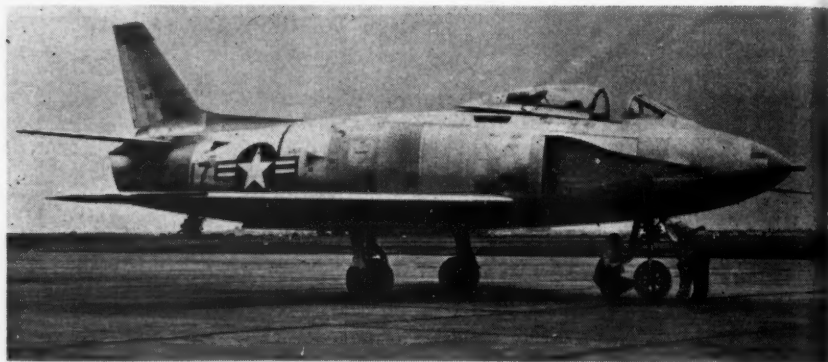
Engineer Developments

Experimental mine sweepers are being tested on a plot of ground (above) at Ft. Belvoir, Virginia, which contains samples of soil from all over the world. The new mine detector is tested to determine its suitability for use with the various types of soil.

Below, another test item, the MC-820 crane.—Department of Defense photos.



Penetration Fighter



The US Air Force North American YF-93A, above, is the service's newest jet penetration fighter. Powered by a J-48 turbo-jet engine, the YF-93A is designed to reach high subsonic speeds.—US Air Force photo.

Jet Motor Grid

The development of a metal screen grid which will prevent a .50 cal. shell case from entering the axial-flow turbo-jet engine at air speeds of 625 miles an hour has been announced by Air Matériel Command Headquarters, Dayton, Ohio. The grid was designed by engineers of the University of Kentucky's Aeronautical Research Laboratory.

Air Matériel Command power plant engineers, who are monitoring the project, point out that a single object such as a ¾-inch nut or an empty cartridge case scooped into the intake-duct of a gas turbine at high speeds could completely wreck or seriously damage a jet fighter aircraft.

Grids currently in use are unable to withstand the impact of particles entering the air stream at more than 275 miles per hour. The newly developed grid has been effective in preventing cartridge cases of .50 cal. projectiles from entering the air intake duct at a velocity of 625 miles per hour, and the final grid to be

developed under the present project is expected to stop particles travelling as fast as 700 miles an hour.

Design of the grid has been found to be a more important factor in its effectiveness than the material from which the grid is constructed. Two designs of the grid have been built and tested. In one, the front of the grid is flat, with the triangular shape of the blade supports pointing to the rear. In the other, the blade supports are reversed, their points being forward. The latter design is considered the better of the two because its construction permits some objects to glance off when they strike.

In use on fighter aircraft powered by engines such as the J-35 and the J-47, the screen grid will be fitted into a device which will permit the pilot to retract it after take-off in order to gain greater cruising range. On arriving at the combat area, the grid would be lowered into position for maximum engine protection.—Air Matériel Command.

Naval Developments

The new motor torpedo boat, above, will be much larger than those used in WW II. The all-metal construction and larger displacement provide greater operating range, more firepower, and increased stability in rough seas. The USS *Pickrel*, below, recently completed a 5,200-mile voyage without surfacing.—Department of Defense photos.



B-50D Range Increased



The new Boeing B-50D Superfortress, above, now is equipped with two 700-gallon external fuel tanks. The same fittings can accommodate 4,000-pound bombs if required. The normal range of this 400-mile-per-hour plane is increased to over 6,000 miles. It has a total bomb capacity of 28,000 pounds.—Department of Defense photo.

Strategic Bombers

As part of its continuous review of existing and planned program, the US Air Force is examining, among other things, the plans for the B-52 long-range bomber.

No decision has yet been reached whether the B-52 will be dropped from its present position as the planned successor of the B-36. Studies are being made to determine the extent to which the B-36 may logically be expected to develop with changes in design and power, such as the addition of jet engines.

In addition to its other responsibilities, the Air Force has an obligation to maintain to the fullest extent practicable the health of the aircraft industry. The Boeing Company of Seattle, which developed the B-52, will continue as a vital part of the industry in Air Force planning, regardless of the decision which may be reached on the B-52.—Department of Defense.

Courts-Martial Law

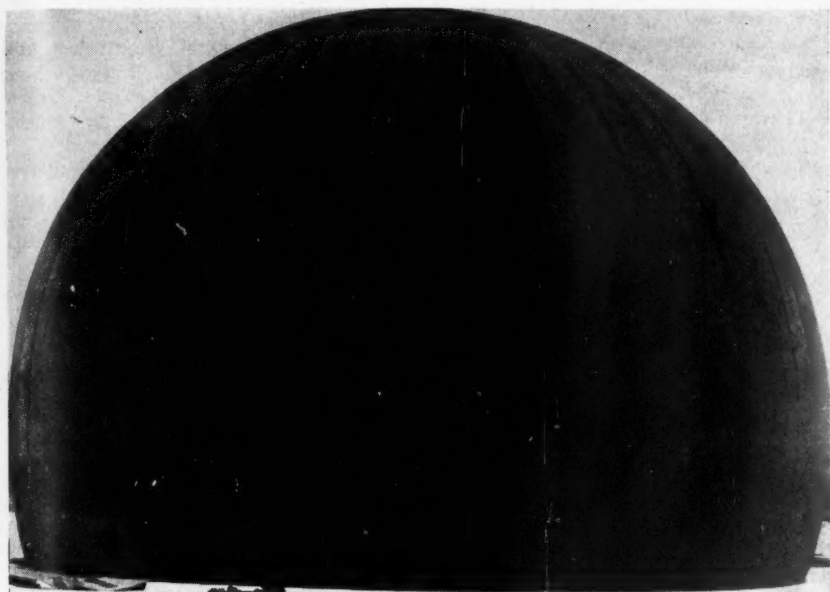
The House recently passed and sent to President Truman a bill reforming court-martial procedures and giving the Army, Navy, and Air Force uniform rules of military justice for the first time in history.

The measure was drafted as a result of widespread complaints that present military laws are unjust and favor officers over other members of the armed forces.

It establishes a new court of military appeals to review major sentences imposed by courts-martial. The three civilian judges of the court would be appointed by the President for 15-year terms, at an annual salary of \$17,500.

The measure also gives enlisted men the right to demand that other enlisted men serve on their courts-martial. Long-standing differences between the services on definitions of offenses, trial procedures, and punishments would also be wiped out.—*The New York Times*.

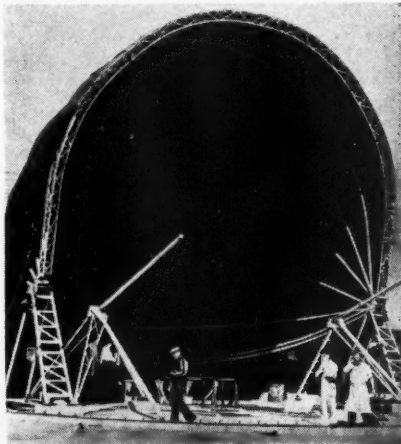
Radome



The balloon-like radar shelter, above, has a circumference of 167 ft. and is 36 ft. high. It is held up by only 1/20th of a lb. of air pressure. Below, right, the shelter being prepared for inflation. The framework shown does not support the structure after the air is pumped in. Note the structure's foundation.—Department of Defense photos.

A beamless building made of fiberglass and synthetic rubber has become a shelter for US Air Force radar installations. The Radome is inflated by a small vacuum cleaner through a tube inserted in the anchorage of the house. When fully inflated, the tall, puffball-shaped structure can withstand a 100-mph gale and a 3-ton load of snow and ice.

The shelter has no pillar or post, lintel or arch. It stays up simply because the internal air pressure is slightly greater than the atmospheric pressure outside; if it were completely airtight, it could be filled by the breath of one man. It is ideal for radar installations, since it has no rafters to interfere with the sweeping arms of the equipment.—Department of Defense.



TURKEY

Rearmament Program

The geographical position of Turkey, together with the "cold war" attitude taken up by Russia on Turkey's north-east frontier, have combined to stress Turkey's strategic importance and have been the causes of her maintaining a for-

the country, and the Army has been trained and organized on American lines. The Turkish Army is now considered to be a co-ordinated and fully efficient fighting force.

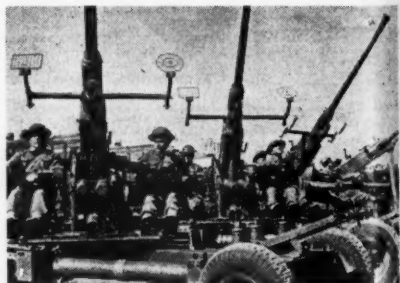
The majority of Turkish equipment



The Turkish Air Force is an integral part of the Turkish Army. Above, C-47s flying in formation. They are the standard transport aircraft used in Turkey. Below, left, F-47 fighters from the Turkish Fighter Command flying in formation during an Ankara review. Below, right, mobile light antiaircraft artillery of the Bofors type.



midable number of men in arms. Until a year or two ago, it was estimated that half of the country's budget was spent in defense and that there were some 700,000 men in arms. Since then, however, there has been a considerable scaling-down in the number, and the present Turkish Army is estimated at about 300,000 men. However, United States advice, materials, and financial support have been pouring into



comes from America—although some of the fighting vehicles are British in origin. Owing to the largely rocky and mountainous nature of the country, heavy tanks are not of very great use, and the majority of the armor consists of light tanks and tank destroyers, mounting a 90-mm gun. Seventy-five percent of the Turkish artillery is armed with American guns, though the light AA weapon is the famil-

iar Bofors, which was, however, manufactured in quantity in America.

The Turkish Air Force is an integral part of the Turkish Army, but it is said to be at present regarded as the weakest link in the defense forces. Its aircraft

Force. During the last 3 years, hundreds of Turkish officers have been sent to America and to the US Zone of Germany to study US military training methods. Since the opening of the mission in Ankara, more than 14,000 Turks have been



Turkey's land forces have been equipped with modern armament supplied under the American aid pact. Above, a general view of mechanized units of the Turkish Army at a recent review near Ankara. Below, left, infantry passing in review; below, right, Turkish horse cavalry provide a striking contrast to the armored units.



are of British and American origin and include *Thunderbolts* and *Spitfires* as fighters and reconnaissance aircraft; *Mosquitoes* and *Invaders* as bombers; and *Dakotas* for military transport. It is organized in three divisions, with about 35 first-line squadrons.

The United States maintains a military mission in Ankara, and supplies instruction of all kinds to the Army and Air

Force. Ten percent of these were officers. Turkish military service is for 3 years. Men are called up at the age of 20 and their liability for service lasts for 26 years. The total number which could be mobilized is said to be about 2,000,000; but the active war strength is in the neighborhood of 500,000.—*The Illustrated London News*, Great Britain.

AUSTRALIA

Business Training

To give Australian army men an insight into business administration and atmosphere, they are to be placed with industrial organizations and retail stores where they will study personnel direction and business organization.

The Army Board has inaugurated a plan for the education of officers and men at universities and technical colleges and in administration. University and technical college courses will be made available to selected personnel. Courses which will be open are degree or diploma courses in engineering, science, accountancy, public administration, architecture, commerce, arts, industrial management, electronics, physics, catering, electrical trades, meat inspection, draftsmanship, and languages.

Those accepted for full-time courses will be excused from military duties—except during vacation periods. Then they will be directed to duties which will have some relation to their studies.

In addition to these courses, soldiers may be sent to leading industrial organizations or government departments to study buying, administration, and handling of personnel. Approval has already been given for detaching a number of officers and men for service with a wide group of business organizations, ranging from oil companies to retail stores.—*Australian Defence and Services Newsletter*.

GREAT BRITAIN

Faster Jet Craft

The Royal Air Force has placed quantity orders for a new jet fighter called the *Venom* to replace the current standard *Vampire* fighter. The *Venom* will have greater speed, a greater rate of climb, and a higher ceiling than the *Vampire*, and is expected to come into squadron service in 1951.—*The New York Times*.

BELGIUM

Arms Budget

The Belgian Minister of Defense recently introduced a military budget of 8,183,126,000 Belgian francs (\$163,662,520) for 1950. This is 10.95 percent of the total budget for the year, as against 9.4 percent last year.

The Defense Minister told the Chamber of Deputies that Belgium's share in the Western European Union and the North Atlantic Treaty involved reshuffling of forces and the creation of three commands already announced.

A combat force command at the disposal of the Western European Union staff at Fontainebleau will consist of one infantry division, a second infantry division now being equipped, and various artillery, tank, engineering, and technical units. Subject to approval of Parliament, this combat force will be increased 1 February 1951 by one infantry division and by antitank and antiaircraft units, a regiment of engineers, medium artillery, commandos, and parachutists.

The two other commands will be the interior defense command for civil defense, and a command charged with maintaining bases.—*The New York Times*.

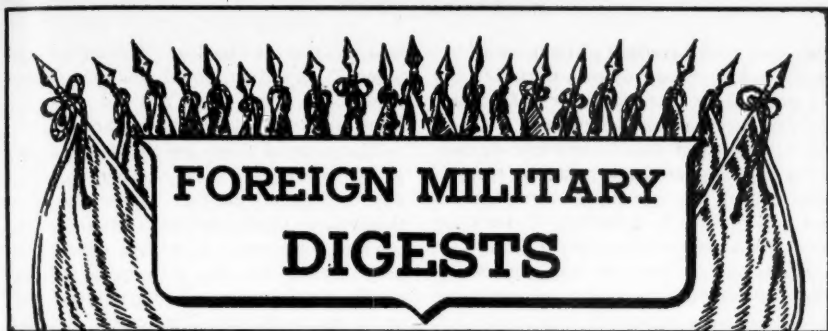
USSR

Aircraft Production

Soviet Russia's Air Force probably is tactically as strong as any group of air forces in the world, and she and her satellites are making 40,000 to 50,000 planes a year, a British expert said recently.

The United States turned out 47,815 military aircraft in 1945, the last year of World War II. It exceeded the rate earlier in the struggle, but has since dropped to a comparative trickle.

The British expert is Asher Lee, former Wing Commander in Air Intelligence during the War. He made his appraisals in a newly published book, "The Soviet Air Force."—*The New York Times*.



Command and Leadership

Digested by the **MILITARY REVIEW** from an article by Air Chief Marshal Sir John Slessor in the "Royal Air Force Quarterly" (Great Britain) October 1949.

ALL of us, I suppose, were brought up on the deathless tale of the charge of the Light Cavalry Brigade at Balaklava in the Crimean War. "Theirs not to reason why, theirs but to do or die," and so, if you remember, "into the Valley of Death, rode the six hundred." But this is not how modern war should be waged. Let's face it: the charge of the Light Brigade was a gallant but rather stupid show for which a commander in these days would rightly lose his job.

Do not imagine for one moment that I deery the value—the literally vital importance—of obedience to orders, obedience even to the death. On the contrary, I have thought sometimes that we do not always nowadays attach enough importance, for instance, to the old principle that if you are ordered to defend a position, that means to the last man and the last round. No. What I do suggest is that in modern war, blind, unquestioning, unintelligent adherence to an order, in circumstances which have obviously changed since the order was given, or which were clearly unknown to the commander who gave the order, may be a serious menace.

I hesitate to cast doubt upon another of the legends of our youth, but, if my

memory serves me right, the boy who stood on the burning deck whence all but he had fled did so because he had been told to—not because he could do the slightest good to anyone by standing there and getting blown up. A brave lad, no doubt, but he seems to me to be in an entirely different category from those officers and men who fell in and stood as steady as rocks on the deck of their sinking troopship, the *Birkenhead*, while the women and children were saved.

They used to have a very good habit in the German Army. In some of their big war games and other exercises, the directing staff used to introduce a situation deliberately designed to see whether a subordinate commander had the training, the common sense, and the initiative to disobey or depart from his orders when it became obvious that the situation had changed or that his orders had been given him in ignorance of the real situation. If the man concerned stuck slavishly to his orders, he got a black mark.

Now, this is obviously a pretty tricky business. It manifestly involves the risk of the man who is not very determined or very steadfast saying, "Oh, well, the circumstances have quite clearly changed

since the group captain gave me that order; I must now use my own initiative and not push home this attack or defend this position to the last man and the last round, because it would obviously be silly to do anything of the sort in the circumstances as I now see them." But I think that risk has to be accepted—I don't believe it is a very serious risk. I stress this point because I think it is a pointer to what I believe is the essence of command in these days—and indeed in any day, for that matter.

Oliver Cromwell, 300 years ago, asked for the plain, russet-coated captain "who knows what he fights for and loves what he knows." In other words, this business of "theirs not to reason why" does not make sense. The captain of aircraft, the company commander, or whoever he is, must be told what the situation is, what he has to do and why he has to do it. And tell him as much as you think will help him, or is essential to co-ordinate his action with others, of *how* he is to do the job. But don't tell him too much of that. Stick as closely as you can to the principle of giving your man a job to do and leaving him to do it in his own way. If he does it well, don't forget to give him a pat on the back; if he does it badly—well, you mustn't let him make a habit of that and remain in a position of responsibility.

Personal Contact

I think it must be obvious that this type of command in these days does call for very special qualities of leadership on the part of the commander. Sir William Slim has defined leadership as the projection of the personality of the commander. In these days of wars of vast areas and huge numbers, it is far more difficult for the commander to get his personality across to his men. After all, in the Peninsula or at Waterloo, the old Duke rode along the Thin Red Line and doffed his cocked hat and said: "Up,

Guards, and at 'em," or "Let battle commence," and Sam Small and his fellows said: "Ba gum, there's t'oad so-and-so himself," and took heart of grace.

That sort of thing used to happen even in my lifetime—I was reading the other day a personal account of the Battle of Omdurman (1898) in which the writer described how, when a dervish charge had been broken but the men were still excitedly blazing away, the "familiar voice," as he put it, of the Commander in Chief, Kitchener, behind him was heard saying: "Cease fire, please, cease fire; this is a terrible waste of ammunition!"

I am sure many senior commanders in both the last two World Wars must have envied the old boys of those days their opportunities of direct contact with the men they commanded—I know I did. Last time it was not nearly so easy—anyway, in the Army and Air Force. Different commanders had different methods. Some went in for eccentricities of raiment; some made great use of the agents of publicity. Do not underrate the importance of these things. To some extent, these registrations of personality, or their photographs in the paper, replace the personal sight of the commander in chief on his horse with his cocked hat and sword. But all the best generals were those who took every opportunity of going up forward and talking to and being seen by the officers and men in the fighting units: Slim, with his "forgotten army" in the jungles of Burma, Montgomery turning a defeated, dispirited force into a victorious army in a few weeks before Alamein, by sheer force of personality.

Before we leave this question of personal contact, just a few more words about it on a lower plane, for, after all, we don't all of us become commanders in chief, and good leadership is just as important in less exalted ranks. First, remember always that you are dealing with ordinary human beings like yourself, with the same

sort of feelings, the same qualities and failings, the same hopes and fears. Never talk down to men. And don't overdo it—the occasional heart-to-heart talk with noncommissioned officers or men (at which their officers should be present) is good. If repeated too often, it becomes a bore and loses its effect—becomes, indeed a menace. You won't overdo it if you remember Sir William Slim's advice to talk to them only when you have something worth hearing to say to them, to know what you are talking about and yourself really to believe what you are saying. Absolute sincerity, of course, is a necessity; troops are quick to spot insincerity, and any taint of the bogus is nearly always detected and distrusted. And remember it isn't only what I may call the first-fighters that you should take into your confidence and put in the picture, but also the less glamorous chaps—not only the air crews, or the tank crews, or the commandos who do the actual fighting and get the medals (and, of course, the casualties), but the clerk, the storeman, the engineer, or the driver.

Every man in the unit, from the commanding officer to the humblest aircraftman or seaman, is an essential cog in the machine—if he isn't he's got no business to be there. You'll get better value out of your squadrons if you sometimes have a talk to, for instance, the cooks who have to get up at 3 a.m. to prepare meals for the crews on the dawn flight, and tell them what it's all about. This is particularly important in the Air Force, where we have these two main divisions: those who fight in the air and those who work on the ground. There is no getting away from it, that complicates leadership in an air force, but not insuperably so. The good commander will always weld the two lots together as a team and have his ground personnel taking an intense personal interest and pride in the efficiency of the unit and the deeds of the aircrews.

Just one word about humor. A very dangerous subject! You may remember Slim's story of the enthusiastic little sergeant who, at the end of a talk about an impending offensive, warmly assured the general that when the day came they would be behind him to a man; and Slim's reply: "Don't you believe it, sergeant; when the day comes you'll be the hell of a long way in front of me." That sort of spontaneous, salty humor is worth a guinea a minute. But there is nothing worse, nothing more embarrassing, than forced humor. I think the only advice here is: never try to be funny. If you are made that way, the opportunities will come to you; if you are not, no one will think the worse of you. But, anyway, try always to look cheerful or, at least, not to look miserable. Remember that, especially when times are bad, your men will be watching you and catching the mood from you. God knows I do not mean to suggest that you should always be hearty—war is bad enough without that! Someone—I think Disraeli—once said that no one should look anxious except those who have no reason whatever for anxiety, and I think that just about sums it up. Don't sentimentalize about your men. You are responsible for their efficiency and well-being, and that must be the concern of an officer before his own comfort. It is obviously unnecessary today to say that men must not be treated like cattle, as they were in the bad old days. But I think there is discernible sometimes nowadays a tendency to go too far the other way, to sentimentalize over them, tell them what marvellous chaps they are, pamper them, and pack them off in a bus to mother every weekend. It isn't good for them and they don't like it—not if they are the right sort of men in the right sort of unit.

I have stressed this problem of personal contact between commanders and their subordinates because I believe it is the most important factor in the subject of

this paper. I want now to examine the main elements that go to make up this quality of leadership, or power of command. The Chief of the Imperial General Staff (CIGS)—to quote him again—has categorized them as will power, courage, knowledge, judgment, and integrity.

Will Power

Will power, the capacity to make up his mind, to take a decision and stick to it, is perhaps almost too obvious a quality. No one can be a good commander without it. Of course, I have known commanders who have confused strength of will with obstinacy, who stuck to a decision just because they had made it, regardless of how silly it may have been or have become with changing circumstances. That is not strength of character—actually it is the reverse, and is usually the sign of the stupid man who is afraid of admitting himself wrong. Someone said: "If a man can't change his mind it probably means he hasn't got a mind to change."

A commander can and should be flexible-minded without being vacillating, without raising those three fatal bogies; order, counterorder, disorder. But any man in any position of really responsible authority is constantly having to make decisions which, if things go wrong, may have very unpleasant results.

But these possible consequences have got to be faced; you have got to back your judgment, make your decision, and have the strength of will to see that it is enforced and obeyed right down through the echelons of command to the pilot in his cockpit, or the rifleman in his foxhole, or the policeman on his beat. Don't fall into the mistake of imagining that because you, as a high commander, have made a decision and given an order, it will necessarily be carried out in the way you intended when it gets right down to the bottom of the chain of command. No doubt it ought to happen that way, but my experience is

that it very often does not do so unwatched and unaided.

It is extraordinary how quickly any faltering of decision, any weakness of will at the top, filters down in some mysterious way to the bottom—and the converse. Look, for instance, at the effect on the Eighth Army of Montgomery's decision to cancel all preparations for the defense of the Delta. Look at the extraordinary way in which Harris's iron determination to destroy Germany communicated itself right down to the crews in the air and the maintenance men at work at their cold and wet dispersal points.

So a good commander must have the strength of will to make a decision and pursue an unflinching course and to change that course instantly if the situation so requires. We had to do it in the Battle of the Atlantic when, in 1943, the U-boats suddenly dropped the pack attacks on the convoys and we had to find some other way of killing them. One of the hardest trials of a man's will power is to persist in what he knows is the right course in spite of heavy casualties—to sit back perhaps in a comfortable office while his men are being killed. He is no good if he can't face that, and he must remember that 500 casualties this week may save 50,000 in months to come. That is a thing some commanders sometimes forgot in the late War.

Courage

Now for courage. We needn't waste much time on physical courage; nearly all men have that—not all, but nearly all. And I think one can usually assume that a commander will not have become a commander—he certainly will not remain one for long—unless he has his fair ration of physical guts.

Perhaps in this connection I might say a word about fitness, or perhaps, to be more accurate, endurance. I have never been one of those who believe that a commander should always run a couple of

miles before breakfast and never drink or smoke. But it isn't only fear that a commander has to resist: it is also fatigue. He has to be prepared when necessary to be up all night—perhaps several nights running—and yet keep his mind clear and be capable of making a decision. That he can't do unless he keeps himself reasonably fit and gets as much sleep as he can when he can. For a really senior commander, a commander in chief, it should very rarely be necessary and never desirable to sit up all night. The decisions he may have to make in the daytime may be so momentous that he should always be as fresh as humanly possible.

The other form of courage, a great deal rarer than physical courage but every bit as important in a commander, is moral courage. A leader of men has to be prepared to do what he believes to be the right thing, regardless of how unpopular it may be or of the consequences to himself. I know it is easy enough to say these rather high-sounding things, but I do think it is necessary to say that a commander should never in any circumstances allow the thought "How is this going to affect me?" to dwell for one moment in his mind.

In particular, may I urge you to have the moral courage—and, let's face it, it does require some guts, especially if you like the man—to report adversely on a subordinate if he really deserves it? As an ex-air Member for Personnel, I can assure you that it is often extremely difficult to get an honest adverse report when one knows for a definite fact that the officer concerned deserves one and, what's more, that his commander knows he deserves one. That sort of thing is usually based partly on a mistaken idea of kindness.

I remember long ago a senior officer saying cynically: "Gentlemen, the Army is a club, and in a club one does not brawl." The services are not clubs; they are desperately serious professions which should

never harbor inefficients. And if you take the line, "Oh, well, old Bill's a nice old thing; true he's not much use, but he's not doing much harm and, anyway, it would be bad luck on his wife and children to have him broke," you are letting down not only old Bill's brother officers but the men who have to serve under him and the country that old Bill is paid to defend.

Knowledge

Turning now to knowledge. We need not dwell much on that. It must be self-evident that a man cannot be a really good commander unless he really knows his job—and a great deal about the jobs of the officers and men under him. Obviously this does not mean detailed technical knowledge. Only the most junior commander can and should have a sound working knowledge of the technical job of each man under him; if more senior officers, commanding large units and formations, try to know all about every man's job they will never see the woods for the trees and will be a public nuisance, not to say danger.

This, of course, applies more strongly the higher one goes in the hierarchy of command. A corps commander can't be expected to be able to fight a tank or build a Bailey bridge, any more than an air marshal can be an expert operational pilot or know all about the guts of a radar set. They must have been able to do this sort of thing in their day, but if they try to do it now they will merely be wasting time which they should be spending on the proper exercise of their command. Please do not take this to mean that I don't think air marshals should fly—on the contrary, I think it essential that they should. What I do mean is that if they are always doing what flight lieutenants are paid to do it can only be at the expense of what they are paid to do—command.

What senior officers must know from past practical experience, from careful objective analysis of present experience, and

from study (including the study of history) is what can be done and what is the best way of doing it, how long these things take, and what are the difficulties, dangers, and hardships involved in doing them.

Judgment

Judgment must be based on knowledge. Beware of the man who thinks he can do the right thing instinctively, which usually means he can't be bothered to get down to it and really study his job, but hopes he will be "all right." Judgment is largely a question of balance—but not too much balance. The man who has in excess what someone once called "the lawyer's terrible capacity for seeing both sides of a question" is liable to find himself unable to make a decision. Nor is knowledge in itself a guarantee of judgment. Several of the cleverest men I know have no judgment at all. Lord Swinton tells in his book of Stanley Baldwin's comment on someone who had committed some particularly outrageous error of judgment: "He could never have done that, Philip; it takes a really clever man to be such a bloody fool."

No; judgment can be cultivated to some extent and certainly grows with experience—that is one of the arguments against too rapid promotion. But I'm afraid if you really have no judgment you are unlikely to be able to develop it much—and without it other qualities such as will power and courage will become a positive danger.

There are few things more perilous than the man with no judgment but with guts and determination—he is almost as dangerous as old Moltke's third category of officer. You may remember he said something to the effect that there were officers who are clever and hard-working—they make good staff officers; then there are some who are clever and idle—they should be marked down for high command; but those who are stupid and hard-working—they are a danger to the service and should be got rid of immediately.

Integrity

Finally, integrity. I have already said that in talking to men absolute sincerity is an essential. Actually, that is true of all dealings with men. A commander is no good unless he can inspire loyalty in his men. But, remember, loyalty is not a one-way street; if your men are to be loyal to you, you must be loyal to them, put their welfare before your own, and never call on them to do anything that you have not done, or been ready to do, yourself. I don't think it would be possible to sum up this quality of integrity better than in a sentence which is engraved on the Winchester War Memorial:

"Thou therefore, for whom they died, seek not thine own, but serve as they served and, whether in peace or in war, bear thyself ever as Christ's soldier, gentle in all things, valiant in action, steadfast in adversity."

Norway and The Atlantic Pact

Translated and digested by the MILITARY REVIEW from an article by Alfred Skar in "Ny Militär Tidskrift" (Sweden) No. 11, 1949.

To a greater extent than perhaps any other nation, the people of Norway were imbued with the idea that the world would enter a period of real peace following World War II. The idea that Norway

should form a bridge between the East and the West had a large and general following.

However, it was impossible to avoid seeing that antagonistic relationships ex-

isted between the western democracies and the dictatorial states of the eastern bloc, thus creating an explosive situation. From the fall of 1947 and on through 1948, situations constantly occurred which showed that neither peace nor freedom was insured in the world.

It was this turn of events which caused responsible Norwegian statesmen to reconsider Norway's position in the international picture. This was done with close co-operation between state authorities and the Norwegian labor movement. Norway has tried to form a bridge between the struggling great powers through the United Nations, but it must be recognized that this work has not brought positive results to any worth-while degree.

With the help of practically the entire nation, the makers of Norwegian foreign policy attempted to attain a common Scandinavian coalition. The study of a Scandinavian defense alliance was followed with lively interest. The discussions carried on in the Norwegian Defense Commission and at the meetings in Karlstad, Copenhagen, and Oslo were, however, unproductive. Even though the Swedish, Danish, and Norwegian people stand closer to one another than any other independent peoples in the world, they also possess widely different experiences and views. For the time being, it was impossible to create a common Scandinavian bloc as regards foreign policy and defense. There was great regret in Norway in recognizing this fact, but there was nothing else to do than to conform to it.

The question which then raised itself was as follows: Should Norway fall back on a policy of isolated neutrality or should she seek safety in close co-operation with the western democracies? The basis for Norway's decision to join in the Atlantic Pact, while Sweden chose to adhere closely to the neutral course, lies in the experiences of the two countries. Until the Germans attacked and occupied

Norway, that country held just as closely to the neutral course as did Sweden. This course bore fruit for Sweden. She succeeded in remaining out of World War II. Norway was not successful in following a neutrality course. She was overrun and occupied by Germany.

This is the bitter fact that no responsible Norwegian can fail to see.

For more than 100 years, Norway avoided participating in military operations. The country succeeded in remaining out of World War I and had expectations that she would again be successful when World War II began. Everything was done that was humanly possible to keep Norway out of the fight. Many believed that the Norwegian foreign policy lacked unity for too long. Norway experienced invasion and occupation by Germany, and her people were given bitter and bloody examples of what it was like to live under a dictatorship.

During 1948, especially, the foreign political situation was often such that it was difficult to see how a new war could possibly be averted. Norway lay on an outer edge of the world and hoped, therefore, to remain outside in case of an armed conflict between the great powers. Technical developments, however, have created certain changes, so that the country now lies in the focal area of possible future military operations.

Looking at the situation from this standpoint, the Norwegians were faced with the necessity of reconsidering the question of joining a democratic defense bloc in the West. Aside from the extremely small minority of Norwegians who are communists, there is hardly anyone who could conceive of Norway joining the eastern bloc. The question, therefore, which actually confronted Norwegian policy was this: How far should Norway go in seeking neutrality? Should the country exist as a military vacuum, or should

it align itself with the western democracies in defense?

We may disregard completely the communist assertion that the Atlantic Pact has an aggressive objective. Norway could, under no circumstances, have a part in an alliance which is aggressive in nature. The question which has been and is the basis of all discussions along these lines is how the country may insure its own peace, freedom, and independence, and still contribute to the maintenance of peace in the world. After conscientious deliberations by the government, the *Storting*, and the Norwegian Labor Party which has a majority in the *Storting*, it was agreed, with the support of all parties except the communists that Norway should sign the Atlantic Pact.

It is well known that a lively discussion occurred in the Norwegian labor movement concerning the Atlantic Pact. In neighboring countries, this Pact was strongly played up in the press and by commentators. The remarkable feature in this discussion was the trade unions' strong acceptance of the governments' foreign policy. Opposition to signing the Atlantic Pact came, mainly, from the intellectuals in the Labor Party.

That the trade organizations took, and still take so clear a stand toward the Atlantic Pact is certainly connected with experiences arising from the appearance in the international trade organizations of Russians and their fellow-travellers. Experiences in the World Trade Organization, which was founded in 1915, made it entirely clear that normal collaboration between the East and the West is not possible at present. The Norwegian trade unions have been described as villains and lackeys of the capitalist class, both in and outside of the country. This destroyed the basis for collaboration. Nor does one like the idea of one's friends, for instance, in the English and American trade movement, being called criminals. One feels a

deep distrust for people who call the members of Norwegian trade unions and their nearest friends bandits and war mongers. One cannot ignore the fact that such abuse is employed to create the impression among the people of the Soviet Union and peoples' democracies that the "poor oppressed labor class" must sooner or later be "freed."

In the election which just ended, the communists attempted to make the vote for or against Norway's participation in the Atlantic Pact. Even though one may take strong exceptions to such a stating of the question, it is in any case certain that the Norwegian government's foreign policy received overwhelming acceptance by the people in a free election.

The Foreign Minister has in the last year been the Norwegian communists' special scapegoat. He was given first place on the Labor Party's election register in Akershus, the prefecture which lies around Oslo. In this prefecture, the Labor Party rose from 35,774 votes in 1945 to 48,158 votes for an additional mandate. The communists receded from 11,047 votes in 1945 to 7,134 votes at the present time.

Still more remarkable was the election result in Finnmark, the prefecture where Norway and the Soviet Union have a common boundary. The Labor Party received 2 representatives in 1945 in this prefecture and the communists 1. This time, the Labor Party received all three.

It would be wrong to overlook the fact that, in addition to the communists, there are persons both in and outside of the Labor Party who are opposed to, or doubtful with respect to, the propriety of Norway's participating in the Atlantic Pact.

To the overwhelming majority of the Norwegian population, the fact that the country now has a part in the security system which the western democracies are building up through the Atlantic Pact results in a feeling of security. It is en-

tirely clear that the expenses and the inconvenience, which of necessity follow Norwegian participation in the Atlantic Pact, operate oppressively at a time when we could put all our resources into the restoration and development of the country's economic life. These tasks are surmountable, however. If the country had tried to arm itself alone and to defend itself without outside help, it would have far exceeded the nation's economic and technical possibilities. The recognition of this fact is general in all ranks of the people.

In conclusion, the Norwegians are no more warlike than before. After having lived through 5 years of war and the German occupation, there is in all a burning desire to be permitted to live in peace and to build up a proper standard of living for the whole nation. But the experiences of 9 April 1940 have left an ineradicable mark in the minds of the Norwegian people. Their reasoning now is: "We were caught asleep. What it cost us is well known. We shall take no chances of the same thing happening again."

Railroads in the USSR

Translated and digested by the MILITARY REVIEW from an article by Antoine Polevoi in "Revue de Defense Nationale" (France) October 1949.

RUSSIAN railroads have a total combined length of 62,100 miles, exceeded only by the United States where there were more than 250,000 miles in 1930. The Russian railroads are completely incapable of supplying the needs of a country which comprises one-sixth of the land area of the globe and which is still far from having attained complete economic development.

Geographic, climatic, and geological conditions in Russia limit the development of interior waterways and present obstacle to the growth of the highway network. These conditions also force the USSR to develop a system of railroads which is much more complex than that of any other country in the world, including the United States.

In studying the problems of Russia, one must never lose sight of the fact that the majority of the republics forming the Soviet Union are north of the latitude of Calais, France. The northern frontier of the United States, for example, does not reach the 50th degree of latitude, while regions of the USSR situated in this lati-

tude are regarded as being in the south of Russia. Moscow is located at about the latitude of 57 degrees. It must not be forgotten, either, that all the important rivers and canals of the USSR, as well as a number of its ports, are ice-bound during a considerable portion of the year. Further, all Siberian rivers, except the Amur, empty into the Arctic Ocean. Under such conditions, the role of railroads in Russia is much greater than in most other countries.

There are about 63,000 miles of waterways in the interior of Russia, but no great effort has ever been made to develop canals. Even today, the most important canals in Russia are those constructed by Peter the Great which join the Volga and the Neva, the wheat and timber route toward the Baltic.

Between the two World Wars, the Soviet government did construct a canal, conceived by Peter the Great, which connects the White Sea with the Volga-Neva system. This canal, which permits the exportation of timber by way of the White Sea, had as its evident strategic object

the creation of a navigable route and a line of defense a short distance from the Finnish frontier.

Traffic over this route, as well as over all the other canals recently constructed, is being developed very slowly. During the Finno-Russian War, this canal played fully the strategic role for which it had been constructed.

The Soviets also constructed the 80-mile-long Moscow canal which connects the capital directly with the upper Volga. Since its completion, this canal has considerably facilitated the provisioning of Moscow, especially in the shipment of construction materials.

Highways Inadequate

The Russian network of highways is often described as being inadequate. A great deal of rock is required for the construction of highways, and there are few quarries in the Soviet Union. Also, construction and maintenance of highways are difficult in a flat country which is buried under snow several months of the year.

In 1937, the highway network of France totaled 404,271 miles. In the USSR, the highway mileage did not exceed 54,000 miles.

On the other hand, the transportation of petroleum products by pipe lines has been considerably developed in Russia. Before World War II, the total length of the pipe-line network had reached 2,608 miles. The two oldest pipe lines were the Baku-Batumi line, constructed under the Czarist regime and measuring 517 miles; and the Makhatch-Kala line on the Caspian to Voronezh, constructed by the Soviets and measuring 683 miles.

The greatest difficulty in the way of Russian transportation is undeniably that of distance. Distances separating the different parts of other countries are not comparable. For instance, the coal mines of the Kuznetsk basin, east of the

Obi River, are separated from the metallurgical centers of the Ural area by more than 1,240 miles.

The Russians started constructing their rail network in 1840, more than 10 years after the western nations. The first large railway line to be built was the St. Petersburg-Moscow line. It was important because it connected the two capitals and made it possible to transport heavy passenger and freight loads between the two points. This line, and all other Russian railway lines, was patterned after certain railway lines in the United States. However, all Russian railroads use a 5-foot gauge, while in Western Europe and America the gauge is 4 feet 8½ inches. Though it is true that this difference in gauge possesses economic disadvantages arising from the necessity of reloading at the Russian frontiers, the disadvantage is at least compensated for by technical and strategic advantages. The fact that it was possible to halt the German advance on Russia during the two World Wars was due in no small measure to this difference in gauge.

The form of the Russian railway network is, to a large extent, a function of the economic structure of the country. Under the Czars, Russia was essentially an agricultural country which had to export its wheat, other agricultural products, and timber in order to receive in exchange the different manufactured products which it needed.

Under the Czars, the development of the railway network took place in accordance with the following needs:

1. A connection between Moscow and all the parts of European and Asiatic Russia.
2. The creation of the necessary rail lines for carrying exports to the ports of the Baltic, the Black, and the White Seas.
3. Inter-connection of coal basins and metal centers.

4. The construction of a few strategic lines in the western part of Russia, which later became Poland and Lithuania.

5. Lastly, connection of the Siberian Far East, Central Russia, and Manchuria with European Russia.

Railroads Under the Czars

In fulfilling these requirements, the following lines were built:

1. Eleven railway lines terminating at Moscow. The principal ones connected,

Siberia; and, lastly, with Arkhangel on the White Sea. The most important line, from the military point of view, was the Moscow-Smolensk-Minsk-Brest-Litovsk-Warsaw line.

2. The lines which permitted Russia to export her products, principally cereals. Among these were the lines that terminated at the Black Sea ports of Novorossisk, Odessa, Nikolayev, Cherson, Theodosia, and Kerch in the Crimea; at the Sea of Azov ports of Mariupol, Taganrog,



Moscow with St. Petersburg, the port on the Baltic and at that time the capital of Russia; with Riga, an important city in the Baltic provinces and a port on the Baltic Sea; with Warsaw, capital of Poland, the economic and military center of this region; with Odessa, the great commercial port on the Black Sea; with Sevastopol, a military port; with Baku and Tiflis in the Caucasus; with the principal cities situated on the Volga or beyond the Volga; with Turkistan and

and Rostov; at Arkhangel on the White Sea; and at St. Petersburg, Riga, and Libau on the Baltic. As for other products, timber was transported to the ports mainly by way of the navigable waterways, and oil went mainly by means of pipe lines.

3. The lines which connect the metal works of the Donetz basin with the iron mines of Krivoi Rog west of the Dnieper. The rail network of the Donetz basin, and the lines connecting this basin to Krivoi

Rog, formed the densest portion of the Russian rail network.

4. Strategic lines which would permit the Russians to carry troops to the German and Austrian frontiers. Warsaw in Poland, and Vilna in Lithuania, were the centers for these strategic railroads.

5. The Trans-Siberian railroad, constructed at the end of the 19th century, connecting Vladivostok on the Pacific with European Russia. This line begins at Tcheliabinsk, passes through Omsk on the Irtysh, Novosibirsk on the Obi, and Irkutsk; passes around Lake Baikal on the south; penetrates the basin of the Amur; passes this River; and continues in a north-south direction to Vladivostok.

6. The Manchurian lines which the Russians constructed with the help of the concessions they had obtained in China following the Boxer rebellion in 1900. One of these lines terminates at Port Arthur.

In spite of the efforts made by the Russians under the old regime to develop their railroad network, it continued to be inadequate. Its rolling stock was also inadequate. But the Russian railroads, as well as other Russian industries, suffered from another defect; they were partly dependent on other countries for their coal. During the years preceding World War I, Russia's coal requirements reached 39 million tons. Five and one-half million tons were imported from other countries through the ports of the Baltic Sea and 9.7 million tons were furnished by the Dombrovo coal field in Poland. The dangers inherent in this situation appeared with the opening of hostilities in 1914. Russia was deprived of the coal coming from both of these sources.

Effects of the World Wars

The Russian railroads stood the test of the mobilization in 1914. But little by little, they went to pieces, mainly through lack of rolling stock and fuel, but also as

a result of demoralization of the operating personnel.

During World War I, the Russian government constructed and modified some 6,800 miles of railroads.

The northern section of the Moscow-Arkhangel line, which had become indispensable for the transportation of supplies coming from abroad, was narrow gauge; it was necessary to modify the gauge in the middle of the War without interrupting traffic.

Arkhangel being ice-bound during part of the year, the Russians constructed the port of Murmansk, which borders the Gulf Stream and does not become ice-bound. Murmansk was connected with the Russian rail network by a line which terminated at St. Petersburg.

As the result of losses of territory due to the defeats suffered by the Russians during World War I, the Russian rail network was reduced to 37,250 miles. Greatly harmed by the military operations between 1914 and 1918, it was harmed still more during the Civil War which lasted until 1921. By 1926, traffic had been restored to the scale of 1913.

In 1927, the Soviet government started the large-scale industrialization of the country and the decentralization of its economy by creating independent industrial centers and agricultural regions. This made it necessary to connect these regional centers with one another by railroads, and to construct peripheral lines such as those connecting the Ural area with Siberia, Turkistan, and the Caucasus.

In spite of the enormous mining and agricultural resources of the Donetz basin, the concentration of the metal industry required long and costly transportation for finished products. In addition, it made the entire Soviet Union very vulnerable militarily.

Soviet authorities succeeded in raising considerably the metal production of the

Ural area and Siberia by combining the resources of these two regions. As is known, the Ural area is very rich in iron and non-ferrous ores. But its coal cannot be coked. Before World War I, the blast furnaces of the Ural area were fed with charcoal, which meant, naturally, the destruction of the forest wealth of the Ural area and only limited production of cast iron and steel.

But 1,250 miles east of the Ural area, in the Novosibirsk region, the Kuznetsk basin contains an abundance of coal veins which had already been partially exploited under the old regime. This coal could be converted into coke. The Soviet government decided to establish a large metal center at Magnitogorsk in the Ural area and another at Stalinsk in the Kuznetsk basin. The same trains which carry coal from Magnitogorsk return to Stalinsk loaded with iron ore. At the beginning of World War II, the amount of coal mined in the Kuznetsk basin was already 20 times the amount mined in 1914.

The linking of the Ural area with the Kuznetsk basin permitted the Russians to resist during World War II after the Germans had occupied the Donetz basin.

It should be added that the Soviet government does not regard the solution which consists in transporting coal 1,250 miles, as ideal. The industrial tie which exists today between the Ural area and the Kuznetsk basin will doubtless be greatly weakened in 1950 when the iron mines of the Kuznetsk basin and the coal fields of Karaganda have been developed.

In addition to the Ural-Kuznetsk development, the principal industrial achievement of the USSR between the two world wars was the creation of independent industrial centers due to the working of new coal fields. A part of this mineral wealth was already known under the old regime, but part was discovered under the Soviet regime. Five

thousand technical engineers and assistants have been employed to carry out a vast program of geological research.

The exploitation of newly found mineral wealth has necessitated the construction of additional railroad lines. The most important of these is the one which crosses the oil-producing areas of Urkshta and connects the coal mines of Vorkuta in the northeast of European Russia with the existing rail network.

The exploitation of the Vorkuta coal mines—whose production reaches 33 million tons—and of the Urkshta oil deposits has made all northern Russia independent of the distant and vulnerable Donetz basin.

The 5-Year Plans

Let us now go back to 1927, the date when the first 5-year plan was put into execution.

The development of heavy industry being one of the main preoccupations of the Soviet government, that part of the plan pertaining to heavy industry was entirely carried out. But this was not true as regards the railroad network. Nevertheless, between 1927 and 1932, approximately 2,900 miles of railroad were constructed, principally in Asiatic Russia.

The most important line, called the "Turk-Sib" (Turkistan-Siberia) line, is 870 miles long and connects the lines of Russian Turkistan with the Trans-Siberian line at Novosibirsk. It makes possible the movement of heavy traffic in both directions; wheat and lumber from north to south, and fruit and cotton from south to north. The strategic role of this line is no less important than its economic role. For a distance of 620 miles, it follows the frontier of Chinese Turkistan, which is only 185 miles away. It will doubtless be recalled that the native populations of these regions, which are weakly attached to China, are of the same race as the Russian Turkistans.

From the point of view of the internal security of the Soviet Union, the Turk-Sib line is likewise of great importance. In Turkistan, the Russians constitute only 5 percent of the population, whereas they constitute 90 percent of it in western Siberia. There is no doubt that the Soviet authorities foresaw the eventual necessity of rushing Siberian troops to Turkistan, borderland country of Persia and Afghanistan. This eventuality has not occurred, however, since the native populations of Turkistan gave proof of their loyalty to the Moscow government during World War II.

The Akmolinsk-Karaganda railroad also was constructed in the period of 1927-1932. This line permits the use of the coking coal of the Karaganda deposits, which are twice as close to the Ural area as those in the Kuznetsk basin.

The track of the Trans-Siberian line was doubled between Chelyabinsk and Omsk.

Although the construction of new lines was not pushed under the first 5-year plan, the railroad network was improved by adding numerous sidings and switching yards adapted to the new traffic conditions.

The second 5-year plan provided for the construction of numerous rail lines, but the necessity for concentrating efforts on heavy industry and the armament industry largely prevented the program from being completed. Among the lines which were planned, certain ones, such as the Novosibirsk-Tashtagol branch, had purely economic purposes. The others, especially the western ones, were obviously designed to serve strategic ends. Such is especially the case with the Roslavl-Sukhinichi-Fastov-Novograd-Volinsk line. At this time, the Soviet government still believed that it would be able to stop an invader from the West at the frontier.

Although few new lines were created in the period between the two World Wars,

traffic did undergo considerable development during this period.

Improvement of rolling stock, together with an increase in personnel, permitted the raising of the average daily run of locomotives from 91 to 141 miles, and of freight cars from 60 to 77 miles, between 1932 and 1938.

The scarcity of water in the central areas of Asia and the areas east of the Volga has presented a special problem to the Russians. They have partially solved it by building locomotives utilizing tenders provided with condensers. These locomotives are able to travel more than 600 miles without renewing their water supply.

The third 5-year plan—1938-1942—provided for the further development of the rail network. But even as early as 1938, this was seen to be impossible, because the international situation imposed other and more urgent tasks upon the Soviet government.

By virtue of the fourth partition of Poland in the treaty concluded between the USSR and Germany, the Soviet Union recovered a part of the territories that it had previously lost. The rail lines in these territories employed the standard European gauge, and the Russians were forced to alter it to the 5-foot gauge.

German Invasion

The invasion of Russia by Germany in 1941 imposed infinitely more serious problems on the Russian authorities.

In 1941, the Soviet government was just as incapable of resisting the enemy on its western frontiers as the Czarist government had been in 1914.

In fact, it is possible to sum up Russia's history in these few words: defeats on her frontiers.

The construction of new rail lines was continued during the months preceding the War, as well as during the fighting.

Having foreseen that the Finns would

join the Germans and that the Murmansk-Leningrad line would be cut, the Russians constructed a branch during the War which skirted the White Sea and connected Murmansk with Central Russia.

Also, in anticipation of the important fighting which might eventually take place at Stalingrad on the Volga, the Russians built a number of lines from Stalingrad to Kazan on the right side of this river. These lines played an important role in the fighting around Stalingrad.

Also, during the War, the Russians constructed the following lines:

1. The railroad which connects Guriev, north of the Caspian Sea, to Orsk, an important station on the Russian rail network in the southern Ural area. This line permitted the transportation of oil out of the Emba area and the supplying and provisioning of the Caucasus after the Germans had occupied Rostov.

2. The line which runs along the west shore of the Caspian and connects Astrakhan with the rail network of the southern Caucasus.

3. The stretches of track necessary for completing the line which follows the eastern shore of the Black Sea and connects the lines of the northern Caucasus with those of Georgia.

4. The Khabarovsk, Komsomolsk, Sovetskaya-Gavan line. This last city is a port located on the west shore of the Japan Sea, opposite the Island of Sakhalin.

Altogether, the Soviet government constructed nearly 6,850 miles of new rail lines during World War II.

During the westward advance after the victory at Stalingrad, the Russians were

forced to reconstruct railroads which had either been damaged or destroyed by the Germans in the recaptured territories.

Postwar Construction

Reconstruction has been completed, and the Russians are now completing the 1946-1950 5-year plan. This plan provides for the construction of 4,865 miles of new track, the electrification of 4,570 miles, and the double-tracking of 7,765 miles. Financing these projects will require one-sixth of the capital which will be invested in the economy of the USSR during the 1946-1950 effort.

The new lines will be built principally in Siberia and Turkistan, parts of the USSR where industry made its greatest development during the War and which, from the strategic point of view, are the least exposed to aerial bombing.

The longest line under construction in the USSR at the present time is the Yug-Sib (South-Siberian) line, which will be 2,235 miles long. It will connect the middle course of the Volga with Tashet, an important station in the Trans-Siberian line, east of the Jenissei River. This line will supplement the Trans-Siberian line, being separated from it by about 250 miles. It will serve the mining area of Magnitogorsk and the coal mines of Karaganda, as well as large agricultural and forest regions. At Barnaul, it will cut across the line constructed by the Russians between the two Wars, which skirts the frontier of Chinese Turkistan and connects Russian Turkistan with Siberia. The economic and strategic importance of this line is quite evident.

The Netherlands Army Air Force

Digested by the MILITARY REVIEW from an article by Squadron Leader H. R. Allen in the "Royal Air Force Quarterly" (Great Britain) January 1950.

THE War ravaged Holland's economy and split its Air Force into fragments. The Dutch are doggedly working towards economic recovery and in large part succeeding. Gasoline, milk, eggs, and butter are unrationed, together with many other commodities, and meat is also to be unrationed. The standard of living in Holland is probably higher than in England, and industrial disputes are rare.

In the same spirit, the Dutch were working towards the rebuilding of their Air Force. When liberation came, there was no Air Force. Now they have behind them a record of achievement for which they can feel justifiable pride.

This by no means implies that they are content to rest on their laurels. They are determined to play to the full their part in the defense of Western Europe.

At the End of the War

On the credit side, there were several airfields which had been either built or enlarged by the Germans. Most of these had suffered heavy bombing at one time or another, however, and few retained permanent buildings of the sort necessary in peace.

The only aircraft available were those of No. 320 (Dutch) Squadron, which had operated from England during the War; these were B-25s.

The personnel situation was bad. A few officers and men had managed to escape from occupied Holland, and had seen war service with the RAF, the RAAF, or the USAAF. But these were not many or of very high rank.

On the debit side, the majority of regular officers had been taken prisoner by the Germans and had missed, therefore, the experience and developments of the

War. In this category were included most of the higher-ranking officers.

There was little money available for rebuilding the Air Force—or, for that matter, the Army and the Navy—and the metropolitan forces were further hamstrung financially by the need to maintain forces in the Netherlands East Indies, where insurgent republicans were causing trouble.

On top of all this, it must be remembered that the prewar Air Force in Holland was very small and by no means modern. Much would have to be learned about operating fast, modern fighters and controlling them scientifically and accurately from the ground.

Finally, the Dutch are very influenced by tradition. The Navy was traditional in Holland, and, therefore, popular. So, to a lesser extent, was the Army. The Air Force carried no tradition—it had fought in no wars or even campaigns, apart from a brief resistance to the invading Germans in 1940. The struggle for recognition—especially financial recognition—was likely to prove grim.

The size of the tasks to be undertaken needs no further elaboration.

Post War Planning

What sort of Air Force? How organized? What equipment? Where based? These were but a few of the questions. But the undercurrent running through all deliberations was the simple, if monotonous, theme: where was the money to come from?

The Royal Air Force took a long view at this juncture. It sent a mission to Holland with the double brief of clearing up problems caused by the temporary occupation of RAF units during the period of the liberation, and of assisting in any

way possible the rehabilitation of the NAAF.

Dutch pilots and other aircrew men continued to pass through the training machine of the RAF, even though the War was finished. A Dutch Technical Training Establishment was formed at RAF Station, Langham, where ground tradesmen were given skilled instruction. The sale of RAF equipment was authorized to the NAAF and assistance given in a hundred and one other ways—including the opening of the British Staff College to senior Dutch officers. This policy, formulated long before the need for the Brussels Treaty and the Atlantic Pact could have been foreseen, is now likely to bear precious fruit.

For the Dutch authorities, man power was a prime consideration; this was solved—sufficiently for short-term requirements, at least—by continuing conscription and allowing likely candidates reserve commissions.

Flying schools equipped with *Tiger Moth* and *Harvard* aircraft were set up at NAAF Stations Woensdrecht and Gilze Rijen, respectively. In due course, *Spitfire* aircraft were purchased and an operational training unit established at Twenthe—on the border with Germany. The first task of this unit was to train a squadron of fighter pilots for the Netherlands East Indies, but subsequent output from the school was reserved for the metropolitan force.

The next step was to rebuild a suitable station for the technical training school. Deelen was selected and the move took place smoothly. The procedure there is still based upon RAF pattern.

The need for a radar network soon became apparent, and plans were drawn up to provide for this.

During this period of long-term planning, the NAAF authorities began to realize that advice from RAF specialists was

necessary. Many war-experienced officers, who had joined only for the duration of hostilities, had by now left the Service, which meant that there was a shortage of experience in several departments. True, the RAF Mission had been an advisory body, but when one of its tasks was complete—that of clearing up the mess left by the liberating RAF—it was felt that closer liaison than that provided by the mission would be advantageous. The NAAF asked the British Air Ministry for a few RAF officers for advisory duties. This request was granted, and six officers were appointed at the beginning of 1947. Of these, two were officers of the General Duties Branch, and the remaining four held commissions in other branches. The appointments were as advisers for Air, Organization, Equipment, Signals, Engineer, and Technical Training. Apart from the advice that these officers were able to give from their own experience, they were useful in providing liaison and direct channels of communication with Air Ministry departments.

Higher Organization

A brief summary of the higher organization of the NAAF might be of value here.

The Minister of Defense is responsible to the Cabinet for the three services. Under him, there are Secretaries for the Marine (Navy) and for War (Army and Air Force). The Air Force relies for political representation, therefore, upon one man who is also the political representative for the Army.

On paper, the Chief of the Air Staff has equal standing to the Chief of the (Army) General Staff. In practice, however, the Army Council is allowed certain say in the formulation of Air Force policy. Further, the (Army) Adjutant General is responsible for allotting conscripted personnel to both Army and Air Force, and the (Army) Quartermaster General is re-

sponsible for handling non-technical stores for the Air Force as well as the Army. While the Air Force is free to work out its policy to a large extent, therefore, the Army still retains certain control over it. In fact, the Air Force can by no means be regarded as "independent"—or, if preferred, "centralized." There will be resistance from several quarters before this ideal is realized.

The Chief of the NAAF is Lieutenant General Giebel, who was recently promoted to that rank. He was taken prisoner by the Germans in 1940, but managed to escape to freedom. He finished the War on the staff of General MacArthur in the Pacific theater.

Next comes Major General Aler, who, until a few months ago, was Commander in Chief of the Metropolitan Air Force. He now holds the appointment of NAAF representative in London for the Western Union Military Organization.

The NAAF Today

The first Dutch fighter squadron (No.

323) was formed at the beginning of 1949. It is equipped with *Meteor Mark IV* aircraft and put up a very creditable performance in Exercise *Foil*.

No. 324 Squadron was recently formed, and it is also equipped with *Meteor IV* aircraft. More *Meteor* squadrons may be expected within a surprisingly short time.

Three airfields are now being used by fighter aircraft and more will be ready when required.

The network of radar stations is well on the way to completion and communications plans are in process of implementation.

All this material progress is the result of hard work and constant battles by the NAAF. All the problems are by no means solved and much hard work still lies ahead.

But the NAAF can face the future with pride in what it has already accomplished, and with confidence that its long-term plans will give it a sizeable and efficient force to be reckoned with.

Changes in the British Empire Since 1939

Digested by the MILITARY REVIEW from an article in the
"Australian Army Journal" (Australia) August-September, 1949.

IN THE period of peace which followed World War I, the British Empire links, strengthened during the War, remained secure; the position of importance occupied by the British Empire in world affairs became further consolidated.

It is probable that, even if World War II had not occurred, the composition of the Empire and its place in world affairs would have materially altered. One of the major effects of this War was to awaken the spirit of nationalism in many countries, particularly in the countries comprising the colonial empires of the democracies of Britain, France, and Hol-

land. The desire on the part of those countries to achieve, in some instances, complete independence, in others, a limited measure of self-government, became widespread.

It is to this rise of nationalism among the dependent countries that the considerable changes which have taken place in the territories associated in the British Empire can be largely attributed. These changes affect both the component parts of the Empire itself as well as the position of the British Empire in relation to the rest of the world.

Egypt

Formerly part of the Turkish Empire, Egypt was a British protectorate from 1914 until 1922 when the protectorate terminated and Egypt became an independent state.

In 1936, an Anglo-Egyptian Treaty of Alliance was signed, whereby provision was made for the withdrawal of British forces from Egypt except for the retention of a British force of not more than 10,000 troops and not more than 400 Royal Air Force pilots in the Suez Canal zone, and the retention of British units at Alexandria for a period not exceeding 8 years.

At the outbreak of war in 1939, the British forces had not been evacuated, and they remained in occupation of Egypt for the remainder of the War. Following a formal request by the Egyptian government in December 1945 for revision of the 1936 treaty, discussions were held between the two governments. In May 1946, the British Prime Minister made the following announcement in the House of Commons:

"It is the considered policy of HM Government in the United Kingdom to consolidate their alliance with Egypt as one between two equal nations having interests in common. In pursuance of this policy, negotiations have begun in an atmosphere of cordiality and goodwill. The Government of the United Kingdom has proposed to withdraw all British naval, military, and air forces from Egyptian territory and to settle in negotiations the stages and date of the completion of this withdrawal and arrangements to be made by the Egyptian government to make possible mutual assistance in time of war or imminent threat of war in accordance with the alliance."

By November 1946, a draft treaty had been drawn up, but the negotiations finally failed, owing to Egypt's assertion of the permanent unity of Egypt and the

Sudan. The British government maintained that the Sudanese should, after they had become self-governing, have the right to choose their future status.

The Egyptian government broke off negotiations in January 1947, and in July of that year appealed to the Security Council of the United Nations to direct the total evacuation of British troops from Egypt and the Sudan, and to terminate the present administrative regime in the Sudan. The Security Council, after examining the dispute, failed to make any recommendation. Subsequently, all British forces, with the exception of those stationed in the Canal zone, were evacuated by the end of March 1948.

Pending the completion of a new Anglo-Egyptian treaty to replace the treaty of 1936, the future presence of British forces in the Canal zone remains in doubt.

Palestine

From 1920 to 1948, Palestine was administered by Britain under a mandate of the League of Nations which officially came into force in 1923.

Continual strife between the Arabs and the Jews during this period led to numerous, but unsuccessful, British attempts to reach a solution acceptable to both peoples. Ultimately, the Palestine question was referred to the United Nations, which decided, in April 1948, on the partition of the country into two independent states, an Arab and a Jewish, together with a joint economic board to ensure the economic unity of the country as a whole. The decision, however, was not acceptable to either Arabs or Jews. The British government, accordingly, announced that, while accepting the United Nations decision, they could not undertake to enforce any solution which was not acceptable to both parties, and that they would therefore surrender the mandate and evacuate Palestine at the earliest practicable moment.

A United Nations commission was subsequently established to implement the partition decision, and on 15 May 1948, the 25-year old British mandate over Palestine ended, the last British troops being evacuated from the country on 30 June 1948.

On the expiration of the British mandate, the Jewish Agency proclaimed an independent State of Israel. The Arab States (Trans-Jordan, Egypt, Iraq, Saudi Arabia, Syria, and Lebanon) refused to recognize Israel and declared war on the Jews. In the fighting which followed, the Jews virtually defeated all the Arab armies and made substantial gains of territory in the areas which were intended to form part of Arab state under the original United Nations partition plan. Hostilities ended in early 1949, and Israel was admitted as a member of the United Nations on 4 March 1949. Up till May 1949, the Israeli government had been accorded either *de facto* or *de jure* recognition by 47 countries.

Trans-Jordan

A treaty of alliance and friendship between Great Britain and Trans-Jordan was signed in London on 22 March 1946, under which Britain, hitherto the mandatory power for Trans-Jordan, recognized the full independence of that country. This treaty, although terminating the mandate over Trans-Jordan which Britain had exercised since 1923, allowed British troops to be stationed in any part of that country.

A new treaty between the two countries was signed in Amman on 15 March 1948. This treaty, which puts the alliance between the two countries on a basis more in keeping with the independent status of Trans-Jordan, provides for mutual military aid should either country become involved in hostilities, and for the maintenance of Royal Air Force units at Amman and Mafrak airfields.

Iraq

Originally a Turkish possession, Iraq was freed from Turkey during World War I. In 1919, the country was recognized as an independent state and was to be placed under a mandatory power. The mandate was allotted to Great Britain.

Relations between the two countries were defined by a treaty which was concluded in 1930 and was to be valid for 25 years. The treaty provided that Britain would be granted sites for air bases at Habbaniyah and Shaibah, together with the right to maintain forces in the vicinity. In addition, it provided that Britain should as soon as possible recommend Iraq for admission to membership in the League of Nations. This recommendation was made and accepted in October 1932, whereupon the mandate was terminated and Iraq became an independent sovereign state and a member of the League of Nations.

In January 1948, discussions took place in London between the Iraqi Prime Minister and the British Foreign Minister with a view to revising the treaty of 1930. A revised treaty was formally initialled at Portsmouth on 15 January 1948. However, this new treaty met with strong opposition in Iraq, which culminated in the resignation of the Prime Minister and his Cabinet. On 4 February 1948, the new Prime Minister announced that his Cabinet had decided to reject the "Portsmouth Treaty" since it did not "realize Iraq's national aims." Thus, pending further negotiations between the two countries, the treaty of 1930 remains in force.

India

Following the conclusion of World War II, general agitation took place in India for a British withdrawal from that country. After extensive negotiations between representatives of the British government and leaders of the Indian people, a plan

providing for the division of the sub-continent into two countries was agreed upon. This plan culminated in the Indian Independence Act, which received Royal Assent on 18 July 1947, and brought to an end British rule in India. The handing-over of power to the new Dominions of India and Pakistan was completed on 15 August 1947, on which date these Dominions formally came into existence.

Following a meeting of the Prime Ministers of the United Kingdom and all the Dominions in London in April 1949, it was announced that advice had been received from the government of India that it was the intention of the Indian people that India should become a sovereign and independent republic. Notwithstanding this fact, agreement was reached at the meeting that India would remain as a member of the British Commonwealth of Nations.

Ceylon

Under the Ceylon Independence Bill, passed as a result of popular opinion expressed in that country, Ceylon officially became a Dominion of the British Empire on 4 February 1948. The Bill incorporated agreements on defense and external affairs.

Burma

Under the Government of Burma Act (1935), Burma was separated from the remainder of British India. This act gave Burma responsible government within a limited sphere. Under the new constitution, which came into effect on 1 April 1937, the balance of political power was held by Burmese ministers.

After the re-establishment of British government in Burma in October 1945, the leaders of the Burmese people indicated that they desired self-government. Negotiations which followed between the Burmese leaders and representatives of the British government finally culminated

in a treaty between the two countries being signed in London on 17 October 1946. This treaty, which was enacted by the British Parliament on 10 December 1947, provided for the complete independence of Burma, although certain defense provisions were included. On 4 January 1948, the Union of Burma, a country not within the Empire, formally came into existence.

Malaya

— Until 1942, British Malaya consisted of the following components:

1. The Colony of the Straits Settlements, which included Singapore, Penang, Malacca, Labuan Island, the Cocos Islands, and Christmas Island.

2. The Federated Malay States of Perak, Selangor, Negri Sembilan, and Pahang.

3. The Unfederated Malay States of Johore, Kedah Kelantan, Trengganu and Perlis.

From the surrender of the Japanese forces in Malaya in 1945 until 1 April 1946, government was exercised by the British Military Administration. On that date, the new Malayan Union, consisting of the States of Perak, Selangor, Negri Sembilan, Pahang, Johore, Kedah Kelantan, Trengganu, and Perlis, and the settlements of Penang and Malacca, came into being. Of the former Straits Settlements, Singapore, the Cocos Islands, and Christmas Island were grouped together to form the Colony of Singapore.

The establishment of the Union evoked a storm of protest from the Malaysias who complained that the new Union constituted an infringement of their sovereignty. Following extensive consultations between the Crown and Malayan representatives, agreement was reached as to the establishment of a Malayan Federation to replace the Malayan Union. Although the components of the Union did not alter, the new Federation provides the following:

1. There will be a central government, comprising a high commissioner appointed by His Majesty, with an executive and a legislative council. The high commissioner will be especially responsible for guarding the rights of the Malay states, rulers, and people.

2. There will also be a rulers' council, which will meet when necessary and exchange views regularly with the high commissioner on federal matters, the most important being immigration policy.

3. Each state will have an executive and a state council.

4. Requirements of citizenship for persons not being of the Malayan race will be more stringent.

This new constitution of Malaya was formally inaugurated on 1 February 1948, when the first high commissioner of the Malayan Federation was sworn in at Kuala Lumpur.

Sarawak

Acting on a recommendation made by the Rajah Sir Charles Vyner Brooke, the State Council of Sarawak in 1946 voted in favor of the cession of the country to the British Crown. Subsequently, the Rajah signed an instrument ceding Sarawak, hitherto a British protectorate, to the Crown. This was made effective on 1 July 1946, from which date Sarawak became a crown colony.

Borneo

British North Borneo, over which the British North Borneo Company was given sovereign powers when it was incorporated by Royal Charter in 1881, and which became a British protectorate under the Company's administration in 1888, became a crown colony on 15 July 1946. Labuan Island, which before World War II was one of the Straits Settlements, was incorporated in this new colony.

Newfoundland

Referendums were held in Newfoundland in 1948 to ascertain the wishes of the people as to self-government or union with Canada. By a small majority the people decided for union with Canada, the merger taking place on 31 March 1949.

Eire

Although in 1921, the people of southern Ireland, under the name of the Irish Free State (as Eire was known until 1937), accepted dominion status, the country was never as closely associated in the British Commonwealth as were the other dominions. During World War II, Eire remained neutral, and an incessant demand for the severance of all formal ties with Britain culminated in the "Republic of Ireland" Bill being passed by the Parliament of Eire on 15 December 1948. On 18 April 1949, this bill became law, whereby all connections with the Empire were severed.

Conclusion

These changes which have taken place exercise an important influence on the position of the British Empire today.

In the case of those countries such as Sarawak, British North Borneo, and Malaya, their assumption of greater responsibilities in their own government is to advantage.

The granting of dominion status to India, Pakistan, and Ceylon, the acceptance of these countries of the responsibilities of self-rule, and their continued participation in Imperial relations, equal in status to other members of the Commonwealth, constitute further evidence of the solidarity of the Empire. In this regard, however, Britain would be adversely affected both strategically and economically should any of these dominions cease to associate as members of the British Commonwealth.

The decision made by Eire to leave the British Commonwealth may to some degree affect the security of the Empire, owing to its geographic proximity to the British Isles.

In those territories, however, where British rule has ended, namely in Burma, Trans-Jordan, and Palestine; and in

Egypt and Iraq where the question of the continued maintenance of British forces in those countries remains uncertain, the position of Britain has been definitely weakened. From a strategical point of view, problems have been created in regard to Imperial defense in the event of any future war.

Internal Security in Time of War

Translated and digested by the MILITARY REVIEW from an article by Colonel B. E. M. Gerard in the "L'Armee-La Nation" (Belgium) December 1949.

WHEN we study the defense of a state or a group of states, the problem resolves itself in the final analysis into two phases:

1. The defense of frontiers.
2. Internal security.

The first of these, like all military problems at the present time, is difficult to accomplish satisfactorily. It is still the same defensive problem, one which has long been studied. Latest developments in the military art will undoubtedly assist in solving the problem.

Internal Security

The second phase, internal security, is more complex.

This complexity is due to the many problems to be solved, to the size and position of the territory in which the problem has to be solved, and to the presence in this territory of many civilian elements whose actions or whose direction easily escapes the surveillance of the military authority.

Moreover, the development and perfection of means capable of being employed in war in the air—planes, paratroops, gliders, and guided missiles—render the interior of the territory of a state or states as vulnerable as the frontiers, especially if the defense is specifically organized and centralized on the ground.

Usually, the interior of a state is considered a zone of least resistance to an assailant who is looking for the weak point in his enemy's disposition. It is the spot where the aggressor thinks his efforts may be successful.

Lastly, the maneuver or the attack of an enemy on the interior of the territory, whether assisted or not by a "fifth column," will usually not bring about decisive results, since the effects aimed at are as follows:

1. To attack the defenders of fortified places from the rear.
2. To attack the production centers or vital centers of the state or states, thus impairing their economic potentiality. Both these effects are limited and usually will not bring about complete collapse of the country.

The experiences of World War II confirm this. Since then, techniques have taken great strides. Aviation has reached supersonic speeds, guided missiles have been perfected, nuclear studies have led to the development of the atomic bomb and opened up an entirely new field.

National Dangers

War now tends to be ideological instead of total. Since total war no longer pays, war is no longer guided by economic in-

terests. War is now dominated by philosophical or social passions which at times undermine the thinking of a nation and result in the formation of "fifth columns."

We propose to go very briefly into the various aspects of internal defense, with particular emphasis on the military point of view, passing over to security measures to be taken against the "fifth column" and the passive protection portion of the defense establishment in the interior of a country. The problem is not easily solved.

Present military literature considers this problem but does not always attach sufficient importance to it.

Some writers tend to minimize the capabilities of guided missiles. They insist that such missiles have not as yet reached a useful stage of development.

Others assume that in case of war the initial possibilities of enemy air forces would be so limited as to be largely ineffective. Likewise, some writers feel that hostile air-transported or airborne forces would be too small for decisive action.

Without meaning to be an alarmist, we nevertheless feel that the danger is real. No better proof is needed than the example of what the Germans did or planned to do in 1940:

1. The vast *coup de main* against Holland by the German 22nd Air-Transported Infantry Division and paratroop units, which forced The Netherlands forces to capitulate in 4 days.

2. The landing plan of the same air-transported and paratroop forces into the Gand bridgehead, as shown in the German documents seized on 10 January 1940 from German aviators who landed by mistake at Mechelen-sur-Meuse;

3. The conquest of Crete.

No one will argue that what was possible in 1940 could not be accomplished now.

The decisive result of the German *coup de main* against Holland arouses specu-

lation due to Belgium's geographical position. This speculation is also applicable to Holland, and, to a certain degree, to France.

The eastern frontiers of these three countries are at a distance from the coast line—North Sea, Channel, or Gulf of Gascony—so that an enemy success in an important operation conducted in the interior of the states in question would possibly compromise the defense of their vulnerable eastern frontiers.

Thus, in the event of a serious reversal in the interior, the countries in question would not have sufficient space to maneuver and to establish the situation.

Air-landed units employed against rear areas are usually classified into two categories:

1. Units employed in combination with ground forces already engaged in combat.
2. Units which are independent of the fighting ground forces.

Generally, it is agreed that the operations of the first of these units take place in what is theoretically called the combat zone, against forces in the field.

The forces of the interior will have to combat the operations of the second category of units. Such operations will consist of raid and guerrilla activities, independent of the battle waged on the frontiers by the ground forces.

In territories of little depth, such as Belgium and its neighbors, the combat zone and zone of the interior will not be very distinct. In fact, the combat zone will be confused with the entire area, being superimposed on the zone of the interior.

How deep into enemy territory may an air-landed operation be launched and still be co-ordinated with the ground fighting on the frontier of the same territory?

It may be co-ordinated in time with the ground fighting, since its purpose may be to attract toward the rear some of the

forces engaged against the enemy in the ground battle.

It may be co-ordinated in *space* with the ground battle, the assailant intending to maneuver with the air-landed forces and to join them as soon as possible.

In 1940, the German 9th Armored Division in 3 days joined the air-landed elements which were holding the Moerdijk bridge, nearly 95 miles inside the eastern frontier of The Netherlands.

After 1940, we in Belgium attempted to determine the extent of each of the bounds of an offensive and we found that it generally was about 250 miles.

All of the Belgium territory is, therefore, included in the combat zone, and all air-landed action conducted at any point in Belgium territory may be co-ordinated with the ground forces fighting on the frontiers.

Defense of the Interior

What are we to conclude from these considerations?

Obviously, the dangers which threaten the interior of a country are increasing, especially in the case of small states.

The ideological character of war today tends to reinforce the ranks of fifth columns. Also, the increased importance of the economic factor in war makes industrial installations in the interior of the territory particularly important targets. In the present state of affairs where means are limited, nations tend to place emphasis on the military effort which they will make on the frontiers or the threatened periphery. The interior thus becomes choice prey for the assailant, against which he may be expected to direct his offensive effort, since this area is the weak and vulnerable point in a nation's defenses.

It is important, therefore, that a sound, effective defense of the interior be assured. This defense ought to be conceived without losing sight of the fact

that the attack, which must come from the sky, is first of all the affair of the air force and the ground defense.

The ground defense, in addition to the permanent guard over vital points for protecting them from *coups de main* by fifth columns or isolated air-landed forces, must consist of as powerful and numerous reserve forces as possible. Such reserve forces must be large enough to search for, encircle, and destroy the enemy.

These defensive forces of the interior must be mobile and composed of elements of all arms. In addition to motorized infantry, they need armored reconnaissance elements, artillery, and flame throwers.

These various defensive elements—air force, territorial air defense, and ground defense—must work together in complete harmony.

To be effective, they must have an extensive signal communication network which is joined to the lookout service of the territorial air defense and complemented by an information and warning service network on the ground.

In this manner, the air force and the territorial air defense will try to destroy aircraft in flight before paratroops are dropped, or before transport planes or gliders are landed.

The air forces will communicate information relative to the importance and location of the enemy forces they have discovered.

In addition, the air forces will participate with the ground forces in attacking and destroying hostile air-landed forces.

It is customarily said that enemy air-landed forces which operate in co-ordination with the enemy ground forces already engaged in combat are under the orders of the field army.

Field army forces of the defender should also be stationed in the interior of the country in order to be able to intervene promptly against enemy air-landed forces. Action against enemy air-landed elements

is more effective the sooner it is carried out after the landing of the elements in question.

The aim which should be pursued will be, therefore, to place large forces in the interior of the country.

It will be noted that the problem will be more difficult to solve the closer the territory to be protected is to the fighting front, for the warning periods will be shorter. Therefore, the time left in which the air force can act will also be shorter. The strength of the intercepting forces will be greater the shorter the distance to the fighting front.

A Common Defense

When we consider the case of a group of states providing a common defense of their territories, the problem becomes even more complex.

Back of the ground front of the threatened frontier, there will be a strongly organized zone about 250 miles deep.

Back of this zone, the interior of the states will not be initially exposed to anything but fifth column operations and operations by air-landed elements, which are independent of the operation carried on by the ground forces. These forces will be relatively weak and will rarely exceed a battalion in strength.

The defense of this zone may not be so highly organized. Except for guards at vital points, the defense will consist of little more than a mobile reserve smaller than the reserve for the zone of the interior closer to the front.

Conclusions

The internal defense I have described here will have only a momentary, initial value. When the powers at war have succeeded in developing their industrial potentialities more completely and providing themselves with more powerful air weapons, the employment of air-landed elements may assume much greater proportions. The execution of independent air-landed operations in force might result in the opening of independent battle-fields.

All these defensive measures will be necessary as the result of technical advances in aircraft, greater air speeds, more aircraft, and more efficient aircraft engines.

The increased efficiency of air forces means that raids by air-landed troops will be employed even more extensively in the future.

To assure the internal security of a territory, it will be necessary to create such a strong defensive front that an enemy will not consider making an attack.

In case of another major war, the pattern would probably take the following form. First, the blitz using all modern means. If this should succeed, the war would be over. It would be hopeless to carry on by underground means. If the blitz, however, is stopped, the second phase would be a softening up phase in which bases, industries, and ports would be bombarded. The final phase would be a struggle between complete teams—air, sea, and ground—in which the accompanying attrition would finally point to the victor.

Lieutenant General Raymond S. McLain

The Merchant Navy in War

Digested by the MILITARY REVIEW from an article by Captain W. H. Coombs in the "Journal of the Royal United Service Institution" (Great Britain) February 1950.

THE Merchant Navy, the British Shipping Industry, the Mercantile Marine—the terms are almost synonymous—may be defined as a "fleet" of some three thousand vessels designed to carry passengers and cargoes to sustain the seaborne trade of the British Commonwealth of Nations. The term British shipping naturally expresses the intricate machinery of ownership and management and shore administration and, of course, the seagoing personnel comprising some 100,000 officers and ratings.

A salient point to be borne in mind when considering the wartime function of the Merchant Navy is that in peacetime it has always been developed with almost complete disregard of any demands likely to be made upon it in time of war. The idea of a strategic reserve of merchant ships has never found favor in Britain, as it has in the United States. Nor have subsidies been favored for vessels of greater speed than that dictated by the economics of their trade, such as were almost certainly granted to the owners of the fast Japanese tankers brought into service shortly before World War I.

Considerable outside pressure had to be exerted before the British Admiralty would provide prewar training for merchant crews in the use of defensive armament for merchant ships. The maintenance of a small but highly efficient permanent Royal Naval Reserve of officers and ratings, and the establishment of naval liaison officers in a few of our principal ports was, and is, almost the only official peacetime connection between the Admiralty and the Shipping Industry. That is the only active recognition of the latent importance of the Merchant Navy in any future war.

This is in accord with historical precedent and might be thoroughly sound in a sane world. But it may well be that it is dangerous to assume that in any future emergency sufficient time will be on our side in which to convert a peaceful trading fleet into a vitally important and immediately effective part of our war organization. It is argued that the only peacetime function of the Merchant Navy is to trade successfully and that commercial efficiency should not be hampered in a highly competitive international industry by burdens of a military character.

It is also argued that the defense of merchant shipping in wartime is the function of the Royal Navy, and that the wisest policy is to permit the Merchant Navy to develop on its own lines in peacetime, unhampered by any consideration of the requirements which would be imposed by a war which may never happen. However, I am convinced that had the average speed of our convoys in the late war been greater, and had our shelter-deck ships been more highly sub-divided, many ships would not have been torpedoed, many that were hit would have remained afloat, and, many lives would have been saved.

It must be admitted, however, that if we had designed our merchant ships to meet war needs, far fewer might have been built for profitable use. And in that case, our merchant fleet might have been numerically even less adequate than it was to meet the enormous demands of the War.

Types of Ships

Merchant ships can roughly be classed as passenger liners, cargo/passenger liners, "tramp" steamers (or general traders), tankers, and coasting vessels.

Tonnages range from a few hundred to 83,000 tons and speeds from 6/7 knots up to close to 30 knots. In each class of vessel, there is considerable diversity of type, and no firm lines of demarkation can be drawn as between the various classes.

A cargo/passenger liner generally trades on a regular route, is scheduled to load and sail on predetermined dates, and is usually of a highly specialized design evolved to meet the needs of passengers and of cargo shippers on her particular trade.

The "tramp" steamer—at one time and possibly still, the backbone of our Merchant Navy—is built as a rule to trade profitably anywhere. She usually carries bulk cargoes such as coal, grain, and ore, of small relative value in comparison with the general cargoes carried by cargo/passenger liners. Consequently, economy in operation—obtained primarily by economy in fuel consumption—is of prime importance. These slow, ponderous vessels have been a vitally important factor in our sea commerce, and their ability to carry large cargoes has been of inestimable value in wartime. But their safety in convoy presents a particularly difficult problem owing to their lack of speed and, at times, poor maneuverability.

The tanker is designed for carrying fluids in bulk, chiefly petroleum products. These ships vary in size from small coasters to vessels of some 25,000 tons deadweight. The loading areas of tankers are comparatively few in number and are, of course, near the world's chief oil fields. Their ports of discharge are world-wide. The military and economic importance of tankers in wartime is self-evident and it is no overstatement to assert that the operations of the Navy, Army, and particularly of the Air Force are dependent upon the safe arrival of the cargoes which the tanker alone can bring in adequate quantities.

Tankers are, of all merchant ships, the

most easily adaptable for carrying and operating aircraft for the protection of convoys.

The coasting vessel, especially designed in various forms to trade around British coasts and to nearby continental and Irish ports, is necessarily small in size and light in draught to enable entry into small ports. They are regarded, together with the fishing fleet (not dealt with in this article), as one of the finest "grounds" for the training of merchant seamen. They proved of great military value in World War II. They largely maintained the East Coast traffic under conditions of almost continuous danger, and were probably the most effective component in the arrangements made for the landing of army stores and equipment on the Normandy beaches in 1944.

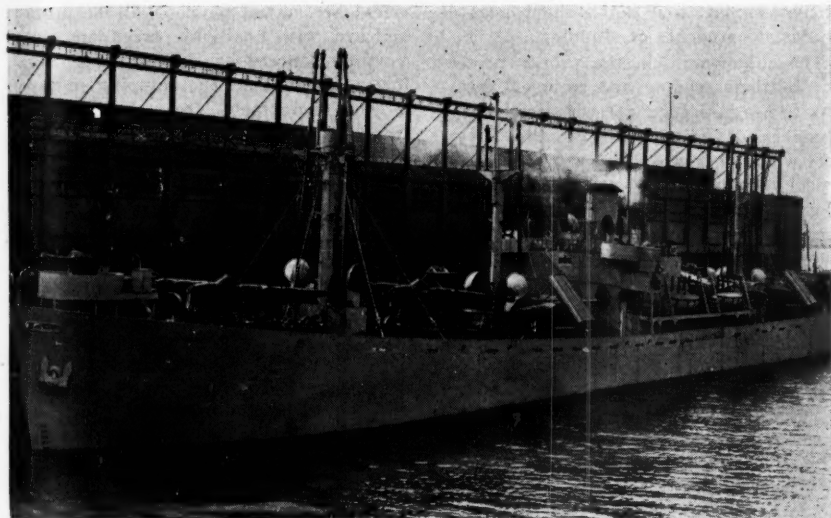
Of all sections of British shipping, less progress has been made by way of replacing old tonnage by new ships in the coasting fleet than in any other section. This is probably due to the fact that the trade finds itself in competition with nationalized rail and road services and, although it is itself under private enterprise, it may be that its operators regard the future with uncertainty. A heavy decline in the number and efficiency of British coastwise vessels would doubtless be regarded by naval authorities as a serious matter.

Operating

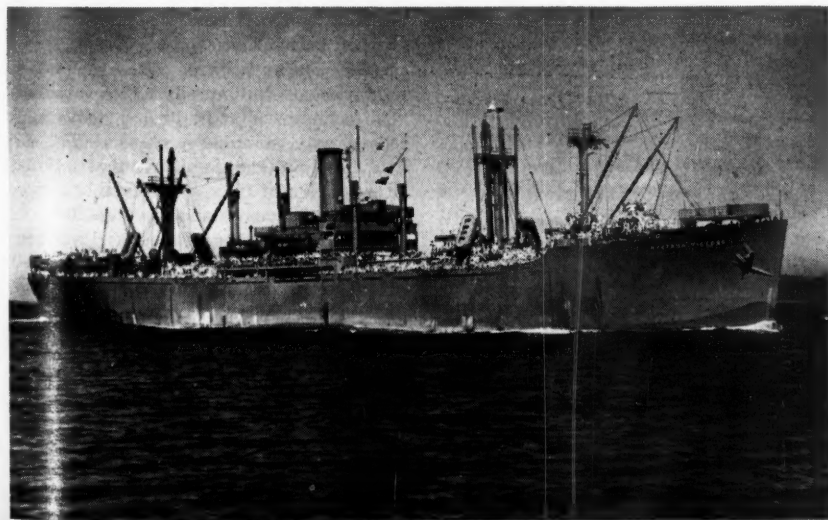
The foregoing indicates the diversity of the shipping industry. It follows that shipping can only successfully be operated by a great number of specialists ashore or afloat.

So too with the crews; specialization is becoming increasingly apparent, particularly among shipmasters, and navigating and engineer officers.

The organization of the shipping industry as between its component parts and in relation to the outside world is neces-



The Merchant Marine is a vital link in the defense of a nation. Above, a US Liberty ship heavily loaded and ready to sail. Note the use of deck space for increasing the vessel's carrying capacity. Below, a US Victory ship being used as a troop transport.—Department of Defense photos.



sarily complex, and not without general interest to students of shipping.

The shipowners, in the proper protection of their trading and technical interests are organized under the aegis of the Chamber of Shipping, except in Liverpool where they are organized in the Liverpool Steamship Owner's Association. These two bodies are in turn linked to form the British Council of Shipping. They deal with such matters as statistics, contractual documents, technical questions, parliamentary matters, and in fact are well qualified to speak with the highest authority for the shipowners as a whole.

In peacetime, the Chamber or the Council is in constant touch with the Ministries and government departments concerned with shipping—chiefly the Ministry of Transport, the Board of Trade, and the Admiralty. They are able to arrange, whenever necessary, that the point of view of shipowners can be voiced in Parliament. In time of national emergency, these representative organizations of shipowners have proved of inestimable value to the government in placing vast knowledge and experience at the command and disposal of the Admiralty and Ministry of Transport.

To deal satisfactorily with industrial (i.e., personnel) questions, the shipowners are organized in the Shipping Federation Limited (in the case of Liverpool the Employers' Association of the Port of Liverpool), which bodies are represented equally with the officers' and seamen's organizations upon a voluntary, non-governmental, and very effective negotiating body known as the National Maritime Board. This latter body has over a long period of years worked out a volume of agreements covering the conditions of employment of the vast majority of shipmasters, officers, and seamen of the British Merchant Navy.

It is worthy to note that these agree-

ments are signed by none of the parties and are, with negligible exceptions, most worthily honored by shipowners and seafarers alike. That the shipping industry is now singularly free of "industrial troubles" should not be without significance to less smooth running industries.

On the seagoing personnel side, the organization of the industry is similar but not identical to that of the shipowners. On technical questions, shipmasters and officers are, in the main, represented by the Officers (Merchant Navy) Federation, comprising most of the several bodies representing shipmasters, and navigating, engineer, and radio officers. These matters are also handled by the Honorable Company of Master Mariners and the Institute of Marine Engineers, often in conjunction with the Officers' Federation.

On the industrial side, each of the several associations and unions of shipmasters and officers are represented on the appropriate panels of the National Maritime Board (NMB). The sailors, firemen, and catering staff are represented on their appropriate panels of the NMB by the National Union of Seamen. Both the shipowners' associations and the bodies representing seafarers are called upon and readily agree voluntarily to serve on official committees and advisory bodies concerned with shipping problems. The net result of this organization is that internal affairs are run in a commendable atmosphere of harmony and co-operation. In its contacts with the outside world, the industry is able to speak authoritatively—and usually with unanimity. Above all, the government is able to call with certainty upon a large group of men, each highly specialized in his own particular field and collectively able voluntarily to assist the administration in the solution of wartime problems.

Training

In the operations of a "fleet" of ships

so varied in size, type, and function as those of the British Merchant Navy, there is necessarily a great deal of diversity in the type and training of the officers and seamen called upon to man them.

The Merchant Navy has always been markedly democratic, in that opportunity has always existed for the unprivileged to reach the top, on merit. In the past, possibly 25 percent of navigating officers' certificates of competency have been issued, after due examination, to men who commenced their careers as seamen. It is, however, more usual for an aspirant to officer rank and responsibilities to enter as an indentured apprentice, cadet, or midshipman.

To an increasing extent, the ship owners are demanding a higher standard of general education than hitherto. A school certificate standard is generally stipulated. The average age of entry has, during recent years, risen to approximately 16½ years. Pre-sea training is becoming a requirement. This is available at the older training establishments, such as the Cadet Ships "Conway" and "Worcester," and at the Pangbourne Nautical College, where the training lasts from 2 to 4 years.

A more recently established officer training establishment is at Warsash, where the pre-sea training course of 1 year is operated by the University College of Southampton. Short intensive courses are available at a number of the principal ports. The Shipping Federation Ltd. offers short courses of pre-sea training for boys intending to enter the service as ratings.

Approximately 50 percent of time spent at a training establishment, up to maximum of 1 year, counts as part of the qualifying sea time required before a young man can submit himself for examination for a second mate's certificate of competency. The remainder of the necessary 4 years must be spent in sea-

going vessels in which practical experience and instruction are gained. The quality of the instruction and training received varies greatly as between ship and ship, and depends in considerable measure upon the interest of and time available to the captain and his officers.

In most ships, a syllabus outlined by the Merchant Navy Training Board is followed. Correspondence courses in theoretical work are available and periodic unofficial examinations are arranged. There is room for further improvement generally in the system of selection and training of Merchant Navy officers as navigators and engineers. No single factor in the safe and successful operation of a merchant fleet can be more important than the efficiency of the officers.

The training system for engineer officers is naturally different than that of navigators. As a general rule, entrants serve a 5-year apprenticeship ashore in a shipyard or approved engineering works. Subsequent service at sea for 18 months as an uncertified engineer officer entitles a young man to submit himself for examination as a 2nd class engineer officer.

It is theoretically possible for an engine room rating, after a long period at sea, to submit himself for examination without having served an apprenticeship ashore. But few, if any, so qualify. The impact of the sea therefore comes several years later in life to the young engineer officer than to the navigator, and adjustment from modern life ashore to the inescapable features of shipboard life is inevitably the more difficult to the former.

Thus, the wastage of junior engineer officers to the service is even greater than is the case with navigating officers. There are those who consider that there is much to be said for introducing into the Merchant Navy a system somewhat similar to that obtaining in the Royal Navy, in which young engineer officers are trained in closer consort with their contemporaries

and opposite numbers of the deck department. The opposite view is, however, very strongly held, not only by the engineering unions but by senior engineer officers of great experience.

The Royal Naval Reserve

The Royal Naval Reserve (RNR) is voluntarily and solely recruited from officers and men of the Merchant Navy, except in the case of the Secretarial Branch among whose officers are those employed in shipping offices ashore.

In the matter of the necessity and size of the RNR, genuine differences of opinion exist. On the one hand, it is held that the availability of a trained reserve of officers with long and up-to-date seagoing experience in merchant ships is a vital necessity to the Royal Navy, particularly in the *early* days of a war. On the other hand, it is asserted with equal force that the efficient running of the Merchant Navy is so important at that same time that it is unsound to denude merchant ships of many of their best officers.

The excellence of the services rendered by the Royal Navy Volunteer Reserve, recruited from non-professional seamen, is used as a point in this argument by both sides. At the present time and for several years to come, the country could, in the event of emergency, have at its command a large number of war-trained and sea-seasoned RNVR officers, and it is admitted that the current need for a large cadre of RNR's may not be as great as hitherto. With the passage of years, however, it would seem inevitable that the Merchant Navy can well become the sole source of supply for an immediately available reserve of officers with adequate deep sea training and experience.

Wartime Demands on British Shipping

On the outbreak of war, British ship-

ping is called upon voluntarily to reorganize on a basis vastly different from that existing in peacetime. In the last two Wars, this metamorphosis has, on the whole, been effected smoothly. Success in this has followed more as a result of intelligent improvisation, co-operation, and goodwill of men who know their business, than as the result of rigid planning.

On the outbreak of hostilities, all merchant shipping immediately comes under the ultimate control of the Admiralty. But the detailed administration of merchant ships, e.g., manning, victualling, loading, and discharging, remains entirely with the owners. Some vessels are requisitioned on behalf of the Admiralty for conversion into armed merchant cruisers, hospital ships, and examination steamers. Some are placed under the White Ensign and manned entirely by RN personnel. Others partly or wholly retain their Merchant Navy personnel and are commanded and officered in whole or in part by RN or RNR officers. In such cases, a curious and not wholly satisfactory position arises in which some or all of the crew serve as quasi-civilian seamen under what are known as T124 Articles of Agreement. The system works, but has such obvious faults as anomalous differences in pay, conditions, and status, which are bound to disturb shipboard harmony and create disciplinary problems.

The Ministry of Transport (which as the Ministry of Shipping, took over in 1939, and still retains the functions formally discharged by the Mercantile Marine Department of the Board of Trade) retained in wartime its normal statutory responsibility for the operation of the Merchant Shipping Acts. It dealt with such matters as safety, load line, crews' agreements and marine casualties. As a war develops, the Ministry of Transport becomes to an increasing extent the Ministry with which the shipping industry as a whole is most intimately connected,

notwithstanding the enduring, overriding authority of the Admiralty in shipping matters. Here again good sense seems to prevail over precise legal definition and demarkation, if such in fact exists. The result is that the Admiralty, the Ministry of Transport, and the Shipping Industry work as a team and get on with the job. Whatever the precise constitutional "set up" may be, the wartime shipmaster can be said to regard his employer, e.g., his shipping company, as his

master in matters concerning the domestic affairs of his ship. The Admiralty is the source of his orders *re* the routing and self-defense of his ship. And the Ministry of Transport is his friend and potential critic under the Merchant Shipping Acts. In wartime, as in peacetime, notwithstanding the jurisdiction of these various authorities, the shipmaster—under Admiralty instructions—still remains ultimately responsible for the safety of his ship.

The seas are cushions of distance which protect us against our enemies. They are also avenues through which we can project and support our joint military power. The seas enable us to apply relatively small forces and yet achieve superiority in critical areas of our own choosing, and to give visible and substantial support to our national interests and national policies.

Admiral Forrest P. Sherman

Control of the seas makes it possible for us to continue to use the ocean highways in peace or war and to deny their use to an enemy should fighting start. The fundamental job of the Navy is to maintain that control of the seas.

Armed Forces Talk

The Armed Forces and Industry in Canada

Digested by the MILITARY REVIEW from an article by Major General N. E. Rodger in the "Canadian Army Journal" (Canada) January 1950.

THE fact that the fighter and the person who makes his weapons are really a single team, the effectiveness of which results almost directly from the degree of mutual understanding and co-operation between the two partners, is obvious to everyone. Sometimes, however, as wars become more complicated, we fail to recognize the need to work at keeping these arrangements for teamwork fully up-to-date.

In the early days when weapons were simple, the producer of them was probably "under command" of the warrior. When firearms appeared, techniques became more complicated and industrial methods called for a greater centralization of manufacture. That trend has continued until now we see weapons being produced which are almost a technical mystery to many soldiers. Thus, we see the full cycle from the warrior making, or closely supervising the making of, his weapons, to the highly technical industrial methods and complicated organizations of today which are able to give the soldier weapons in quality and quantity better than he ever dreamed of.

Nevertheless, both that trend and the fact that war now inevitably uses the whole of a nation's resources make it even more vital that the design and production of weapons be the best that the combined thinking and efforts of the scientist, the soldier, and the industrialist can devise. The soldier who has no confidence in his weapons is practically useless. The industrialist who fails to ensure that the weapons he produces meet the needs and desires of the soldier is probably wasting time and materials.

General Dwight D. Eisenhower described this relationship best by referring to the armed forces as the cutting edge

and industry as the shaft of the nation's weapon for waging war.

Two examples from World War II are:

1. Japan, under too much control of the military, diverted probably too early and too much of its rather immature industry to war production well ahead of the War. She therefore had large stocks of war equipment on hand, but had lost her flexibility and her ability to develop better equipment. Her industry was brittle and failed to maintain output in adversity.

2. Germany, on the other hand, had an excellent scientific and industrial background; a sound system of control of research, development, and production; and a good relationship between industry and the armed forces. As a result, she not only produced large quantities of good equipment but was able to make notable improvements and to keep up her output throughout the War, even when severely harassed. Perhaps her main limitation was the inadequacy of the automotive industry, which resulted in most of her divisions being horse-drawn even to the end of the War when the Allies were almost approaching immobility through a surfeit of motor transport.

An important effect of the trend toward more complicated weapons and equipment is the increasing proportion of man power required in the laboratory and the factory compared with soldiers on the battlefield. This is readily seen in today's ships, aircraft, tanks, or guns, compared with those of even 10 years ago. In spite of improved methods of mass production, I would think that today's or tomorrow's ships, aircraft, tank, or gun would require twice the man power of their predecessors to produce. Furthermore, the transport of these equipments to the field and their repair there will probably

cost more man power. Perhaps another illustration of this trend (though there were other causes as well) is the fact that Great Britain put some 70 divisions in the field in World War I and only 30 in World War II, both of which were "all out" efforts for her. Corresponding figures for the British Commonwealth were 89 and 65. This may indicate that ultimately we will reach the stage where there will be one "warrior" (sailor, soldier, or airman?) to push the buttons, and the rest of our man power will be occupied in seeing that something happens when he does so.

World War II

Canadian industry and armed forces each made important and effective contributions in World War II. However, they did not do it in partnership. Generally speaking, industry produced equipment for the Allies at large, and not directly for Canadian armed forces.

The reasons for that anomaly were:

1. Prior to and at the beginning of the War, all arrangements contemplated Canadian forces being equipped, except for clothing and personal equipment, by the United Kingdom. To a large extent, even the initial orders on industry were from the United Kingdom.

2. The Hyde Park agreement led to pooling arrangements whereby Canada produced maximum quantities of items she could make efficiently and obtained other items from the United States or the United Kingdom.

3. Canadian forces operated mostly as elements of larger British forces and were maintained in the field through British pipelines. It was impracticable to inject Canadian-made equipment into that pipeline and expect it to come out of the right tap at the far end for the Canadian units there.

The fact that the Canadian war industrial pattern was largely set by her major Allies and not by Canada's own armed

forces' needs had other important results:

1. Industry did not obtain experience in production of a complete range of equipment.

2. Little experience was gained by the armed forces or industry of working in full partnership with each other.

3. While Canadian production was much greater in total quantity than her armed forces used, it was unbalanced in that she produced far more of some items than she used and less in other categories. Thus, industry avoided the difficulties of adjusting output to Canada's demands.

4. Canada remained largely dependent on the United Kingdom and the United States for initial designs and specification and for inspection arrangements. The delays and difficulties of dealing with remote design authorities for modifications or relaxations of specifications were considerable.

5. The Canadian armed forces were not able to carry through the improvements to their equipment which they might have done if they and industry had been in full partnership.

The automotive industry was somewhat of a special case. Canadian designs were developed and improved in co-operation with Canada's own soldiers. Almost one million vehicles were produced which provided the Allies with several times as many as Canadian forces needed. Furthermore, by special arrangements, these Canadian vehicles were put into the pipeline and delivered to Canadian units in the theaters of war.

Although Canadian industry did not work directly for or with Canada's own armed forces in the last War, it did a magnificent job in the face of great difficulties. Starting from scratch, it was able to create complete new industries, as well as developing many new techniques and methods. Production was at the rate of \$300,000,000 per month, or a total for the War of \$11,000,000,000. It included such

quantities as 16,000 airframes (though no engines), 4,500 vessels and sea-going craft, 2,000,000 tons of explosives, 1,800,000 machine guns and other small arms, 4½ billion rounds of small arms ammunition, 900,000 vehicles, and 16,000,000 tires.

Situation Today and in the Future

The wartime mechanism for co-ordinating and supervising that vast war production task has nearly disappeared. A nucleus organization has been evolved to carry out today's task of planning industrial mobilization and of producing for the peacetime needs of the armed forces.

The organizations concerned with providing needs of the armed forces can best be shown in relation to that chain process of obtaining new equipment which starts with research and development and leads through engineering design, procurement, production, inspection storage, and distribution, to use.

1. **RESEARCH:** The Defense Research Board operates in the Department of National Defense on behalf of the three armed forces.

2. **DEVELOPMENT AND DESIGN:** By the armed forces with assistance and co-ordination by Defense Research Board. In this field, good teamwork with industry is evolving. Many of the projects are carried out by industry in consultation with the armed forces.

3. **PROCUREMENT:** The Canadian Commercial Corporation, a Crown company in the Department of Trade and Commerce, carries out the "purchasing agent" functions for the armed forces.

4. **PRODUCTION:** Industry, plus Canadian Arsenals, Ltd. The latter is a Crown corporation, supervised by the Minister of Trade and Commerce, which operates certain government arsenals to produce munitions and to develop new manufacturing techniques in those fields. It is mainly concerned with ammunition, explosives, small arms and guns, military optical in-

struments, and certain radar equipment.

5. **INSPECTION:** The Inspection Service is an agency within DND, staffed mainly by civilians, which operates on behalf of the armed forces.

6. **STORAGE AND DISTRIBUTION:** Supply organization of the armed forces using a system of depots and magazines throughout Canada; responsible for receipt, storage and issue of military equipment.

Each of these agencies is so organized that rapid expansion and even a regrouping of functions could take place with a minimum of difficulty in the event of mobilization.

It may be of interest to note here the methods of organizing that process in the United Kingdom and the United States. Neither of these systems would be suitable for Canada, not only because they are more elaborate than we need, but also because they are designed to serve directly and primarily their own armed forces.

1. In the United States, the armed forces largely control their own research and development and do their own procurement. The Munitions Board within the Department of Defense co-ordinates procurement and does the military aspects of industrial mobilization planning.

2. In Britain, the Minister of Supply continues to operate in peacetime with responsibility not only for meeting the peacetime requirements of the armed forces and carrying out their research and development but also for planning over-all industrial mobilization.

Planning for Mobilization

Planning for industrial mobilization in Canada is essentially the responsibility of the Department of Trade and Commerce. The mechanism which has evolved to date comprises:

1. The Industrial Defense Board, composed of leading industrialists and government officials, was created in April

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1948. Its task is to advise the government through the Minister of Trade and Commerce on matters related to Canada's industrial war potential, and in particular to ensure that a plan for mobilization of industry in the event of war is developed and maintained up-to-date.

2. The Canadian Industrial Preparedness Association (CIPA) is a voluntary and self-supporting association formed by Canadian industry with the objects of promoting and assisting in measures for the planning and preparation of industry for mobilization in the event of war, and also to foster greater mutual understanding between industry and the armed forces. It has established a number of Industrial Preparedness Committees, each in a special field of manufacturing or raw materials, which carry out studies of production potentials and special problems for the Industrial Defense Board.

3. The Joint US-Canadian Industrial Mobilization Planning Committee was created in April 1949 to facilitate the interchange of information and to arrange measures of co-operation in connection with industrial defense planning for the two countries.

4. The Department of Trade and Commerce, and Canadian Arsenals Ltd., are responsible, respectively, for co-ordinating the policy and general efforts in this field and for much of the detailed preparations and development of manufacturing techniques for war equipment having no commercial counterparts.

Senior officers from the armed forces are members of the Industrial Defense

Board and are honorary Members of Council of CIPA. Also, service officers are invited by CIPA to sit on appropriate Preparedness Committees. Thus, both sides of this partnership have good opportunities to present their points of view and to understand each other.

There are certain factors and trends which are very likely to apply in any future war as in the past. These are:

1. Canadian industry will be bigger and more diversified than before.

2. Because of the inevitability that the United States will be in any future war from the beginning, and because of lessons learned the last time, there will probably be a much greater integration of Canadian industry with that of the United States.

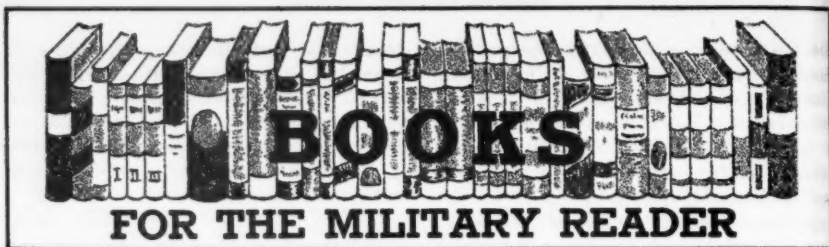
3. Because Canada's armed forces would likely again be elements within the larger forces of her major allies, and would therefore not be supplied by a special Canadian pipeline, we can expect to see much of Canada's war production being arranged in consultation with those major allies and not directly for Canada's own forces.

4. Thus, Canadians are likely to have to base their plans for industrial mobilization largely on assumed over-all requirements made up of those of their own forces, plus estimated allied needs.

5. Similarly, efforts to develop better equipment will be hampered by the fact that in the long run Canadian armed forces can hope to use only equipment of a type also used by her major allies.

In time of peace as well as in time of war, there must be an indivisible partnership between our industries and our Armed Forces. Without such a team, we could not have won the war. Unless it is made permanent we cannot win the peace.

General Jacob L. Devers



I WAS THERE. By Fleet Admiral William D. Leahy. 442 Pages. Whittlesey House, McGraw-Hill Book Co., Inc., New York. \$5.00.

As the top military adviser to two wartime Presidents of the United States, Admiral Leahy was in a unique position to write one of the outstanding books on America's participation in World War II. *I Was There* is such a book.

As Chief of Staff to two Commanders in Chief, and a member of the Joint Chiefs of Staff, Admiral Leahy participated in the major strategic decisions of the War. At the same time, he had the opportunity to observe and evaluate intimately world events and personalities for more than 7 years. From a record of daily notes he kept for Presidents Roosevelt and Truman, he has written a volume that is skilled, dignified, and authoritative.

The book covers three distinct periods: First, Leahy's service as Ambassador to Vichy France (1941-1942); the War period under Roosevelt (1942-1945); and the Truman administration (1945 to Leahy's resignation in 1949).

The diplomatic mission to Vichy is actually a prelude to the War years, and important because it bolstered France in escaping complete German domination until 1942.

On becoming Roosevelt's Chief of Staff to the Commander in Chief, Leahy became the first to ever hold that position. As such, he was the vital link between the

Joint Chiefs and the President. The book gives a running account of the operations of the Joint Chiefs and the Combined Chiefs, and thus is an invaluable source of information of many of the major strategic decisions of the War.

As Commander in Chief, Leahy reports, Roosevelt "performed this portion of his constitutional duties with greater skill and ability than any preceding President." And he adds, "To my knowledge, he (Roosevelt) never made a single military decision with any thought of his own personal political fortunes."

In the over-all direction of the War, Leahy makes it plain that it was Roosevelt and Churchill who ran things and agreed on the major moves. "They really ran the War," he states.

Leahy does not minimize the command difficulties that arose because of the loose organization under which the Joint Chiefs operated. But as an example of unified high command, the Joint Chiefs "succeeded beyond our fondest hopes." As to later concepts on unification, Leahy says: "I never opposed the unification of the administrative functions of the armed services, but I . . . believe that unification of command under anybody other than the President would be detrimental to national defense and dangerous to the maintenance of constitutional control of the armed services in war."

As a major presidential adviser, Leahy was in on many of the political events of the War years. He had numerous opportunities to evaluate Churchill, Stalin,

De Gaulle, and other world personalities. He was present at the Washington, Quebec, Cairo, Teheran, Yalta, and Potsdam Conferences.

In answer to those who felt that Roosevelt made dangerous concessions to Russia at Yalta, Leahy says: "It was my feeling that Roosevelt had conducted the Crimean Conference with great skill and that his personality had dominated the discussions."

Leahy definitely shows that the suspicions and unfriendly changes in the Russian attitude toward the Allies began to show immediately after Yalta, and before the death of President Roosevelt.

Leahy continued as Chief of Staff to President Truman after Roosevelt's death. "One thing was certain as the defeat of Germany became inevitable," he says; "the great single political problem the new President faced was that of getting along with the Soviets."

This was borne out at Potsdam, which Leahy characterizes as the longest, and "in some respects . . . the most frustrating," conference of the Chiefs of Government. Despite the disappointments, "our new President, in my opinion, had handled himself extremely well at Potsdam." But Potsdam, in Leahy's view, marked the beginning of the "cold war."

As to the atomic bomb, which was used for the first time in warfare as the President was returning to America from the Potsdam Conference, Leahy says that Truman did not like the idea of using it, but was persuaded that it would save American lives and shorten the War.

"It is my opinion," says Leahy, "that the use of this barbarous weapon . . . was of no material assistance in our war against Japan." Japan, he feels, was already beaten when the bomb was dropped. "These new concepts of 'total war' are basically distasteful to the soldier and sailor of my generation."

BERLIN COMMAND. By Brigadier General Frank Howley. 276 Pages. G. P. Putnam's Sons, New York. \$3.50.

There is no doubt in General Howley's mind that postwar events in Berlin symbolize one main thing—the fundamental conflict of Russian communism and Western democracy. This conflict dominates the entire account he gives of the 4 years he served as Deputy Commandant and Commandant of the United States Sector, and head of the Office of Military Government in the former German capital.

General Howley doesn't pull his punches in *Berlin Command* as regards the Russians, or for that matter, as regards his own superiors, government, or allies.

Since the Russians often referred to Howley as "brute general," "enemy of democracy," and "Beast of Berlin," it may not be surprising that Howley regards them as "the world's most colossal liars, swindlers, and cutthroats, and there is no reason to think they will change."

What is surprisingly revealed by the book, however, is Howley's apparent differences with General Clay and his apparent disagreement with some of the highest governmental decisions regarding the occupation.

The book shows the many problems of military government in administering a shattered city of 3,200,000 persons, and the difficulties of four-power control as evidenced by the Berlin Kommandatura. And the book gives some indication of the wide range of problems of the occupation—social demoralization, black markets, currency reforms, the political rebirth of a defeated enemy. Feeding Berlin was the biggest job of the Kommandatura, Howley says, and he charges that the Russians used food as a political weapon.

The Russian-imposed blockade was an attempt at "conquest by starvation," according to Howley. The Russians at

first attributed their walkout of the Kommandatura and the subsequent blockade to Howley's leaving a meeting after 13 hours of wrangling. Later, the Russians said it was the result of Western currency measures. Howley's own view is that the blockade was Russian retaliation against the Berliners for the repudiation of the Communist regime by the voters in 1946.

There is no doubt that the Western powers are still in Berlin because of the unexpected effectiveness of the airlift. Howley has some interesting comments on prior plans that were drawn up for just such an eventuality as the blockade, and on the counterblockade that finally made the Russian position untenable.

While Howley questions the wisdom of the original decision which gave up valuable agricultural areas "for a small corner of the Berlin rubble heap," he believes Berlin was worth the price. In his view, Berlin taught the Americans the "real intent and meaning of communism." Smashing the blockade gave the Germans new hope. And the Americans have learned much about military government and ways of countering propaganda.

When historians get around to viewing the Berlin occupation in the dispassionate perspective of time, they will at least know, from *Berlin Command*, where General Howley stood during one hot phase of the cold war.

WAR OR PEACE. By John Foster Dulles. 274 Pages. The Macmillan Company, New York. \$2.50.

A book on current international problems by the well-known authority and adviser of the State Department.

BRAZIL: AN EXPANDING ECONOMY. By George Wythe. Assisted by Royce A. Wight and Harold M. Midkiff. 412 Pages. The Twentieth Century Fund, New York. \$3.50.

THE GRAND ALLIANCE. By Winston S. Churchill. 903 Pages. Houghton, Mifflin Company, New York. \$6.00.

In this third volume of his monumental narrative of World War II, the wartime Premier of Great Britain describes the major events of 1941. The year began with London in ruins and Britain fighting alone. In June, Hitler attacked Russia. The Battle of the Atlantic was in full swing, and the struggle in the Mediterranean was underway. It was the year when Churchill and Roosevelt fashioned the Atlantic Charter. And as 1941 came to a close, the United States was plunged into the War by the attack on Pearl Harbor, and the first Declaration of the United Nations was completed.

SEEDS OF TREASON. The True Story of the Hiss-Chambers Tragedy. By Ralph de Toledano and Victor Lasky. 270 Pages. Funk & Wagnalls Company, New York. \$3.50.

SOVIET ECONOMY DURING THE SECOND WORLD WAR. By N. A. Voznesensky. 160 Pages. International Publishers, New York. \$2.25.

CORDON AND SEARCH: With 6th Airborne Division in Palestine, 1945-48. By Major R. D. Wilson. 275 Pages. Gale & Polden, Ltd., Aldershot. \$3.00.

AN ANATOMY OF AMERICAN POLITICS. By Arthur B. Tourtellot. 356 Pages. The Bobbs-Merrill Company, Indianapolis. \$3.00.

TWENTIETH CENTURY ECONOMIC THOUGHT. Edited by Glenn E. Hoover. 819 Pages. The Philosophical Library, New York. \$12.00.

THE CADENCE SYSTEM OF TEACHING CLOSE ORDER DRILL. By Colonel Bernard Lentz, U. S. Army, Retired. 68 Pages; Illustrated. Military Service Publishing Company, Harrisburg, Pa. \$1.00.